# NEW REMEDIES.

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MATERIA MEDICA, PHARMACY, AND THERAPEUTICS.

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FRED'K A. CASTLE, M.D., - - EDITOR.
CHARLES RICE, PH.D., - ASSOCIATE EDITOR.

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## EDITORIAL.

ABOUT a year ago, the subject of obtaining the exemption of registered pharmacists from jury duty was brought up for discussion in the Society of German Apothecaries of this city, and a committee was appointed to act in the matter. A few months later, the College of Pharmacy of the City of New York also appointed a committee for the same purpose. These two committees met and organized as a joint committee.

A petition to the Legislature was drawn up, and portions of the city were allotted to each member of the committee for a thorough canvass to procure signatures. We quote one or two passages from the petition.

"And furthermore, that whereas by chapter 817 of the laws of 1872, passed May 22d, 1872, it is enacted among other things, in substance, that none other than registered pharmacists shall be permitted to compound any prescription of a physician, or to be in charge of a pharmacy, and whereas very many pharmacists are persons of limited monetary means, and therefore unable to employ registered pharmacists, as is rendered necessary by said statute, it results that all such persons of limited means, if compelled to do service as jurors, and if they would not close their places of business during such service, would incur the risk of fatal errors by incompetent subordinates in compounding prescriptions, and thus become subjected to irreparable damage to their professional reputation and the fine of fifty dollars, imposed by said statute for each prescription compounded by a non-registered pharmacist.

"And furthermore, as the jury system of this State is derived from and founded upon and closely allied to that of England, your petitioners would respecfully call to your attention the fact that it has been found by the Legislature of that country (the Parliament) to be expedient and a matter of public policy as well as public justice, to exempt all pharmacists from liability to be drafted as jurymen."

Nearly 250 names of pharmacists and 150 of physicians were obtained. An Executive Committee was then elected to take the proper steps for bringing the petition and a bill before the Legislature and to secure the passage of the latter. The Committee had the fortune to interest the Hon. P. Eidmann, a Senator from this city, in the matter, and he accordingly introduced an amendment to that section of the code of civil procedure which exempts physicians and dentists from jury duty, so as to include, also, registered pharmacists.

The bill passed is as follows:

SECTION 1. Subdivision two of section one thousand and eighty-one of 'The Code of Civil Procedure' is hereby amended so as to read as follows:

"§ 2. A practicing physician, surgeon, or surgeon dentist, having patients requiring his daily professional attention, and not following any other calling, and a licensed pharmaceutist or pharmacist while actually engaged in his profession as a means of livelihood."

This amendment was adopted without opposition in the Senate, and was introduced by Assemblyman Brodsky in the Assembly, where after some discussion it was also passed. In due time the bill received the signature of the Governor and has therefore become a law.

On presenting his certificate of registration from the Board of Pharmacy to the Commissioner of Jurors, a pharmacist will, under this law, be exempt from serving as a juror.

The bill exempts a licensed pharmaceutist or pharmacist while actually engaged in his profession as a means of livelihood. The words "or pharmacist" appear to be merely *explanatory* to "pharmaceutist," so that the above sentence could be also expressed thus, without interfering

with its true meaning: "a licensed pharmaceutist (or pharmacist), while actually engaged in his profession as a means of livelihood."

If this is the sense of the phrase, then *only licensed* pharmacists will be exempt; and as there is no State Board of Pharmacy, but merely a local Board of Pharmacy for the City and County of New York, pharmacists residing in other cities of this State will not be able to become licensed, although they might wish to, and hence they can not be considered as exempt from jury-duty.

When we first read the bill as passed, we supposed that an error had been committed in not placing a comma behind the word "pharmaceutist," which would have exempted two classes of individuals, namely: 1st. *Licensed* pharmacists (meaning those who have obtained license from the Board of Pharmacy of the City and County of New York), whether they are engaged in their profession as a means of livelihood or not. 2d. Pharmacists (irrespective of license) while actually engaged in their profession as a means of livelihood. We have, however, since ascertained that the bill, as originally passed, covered all classes of pharmacists throughout the State, as it did not then contain the word "licensed." But Governor Cornell, fearing that many persons would claim exemption under this law, while not properly entitled to it, refused to sign the bill, unless it was amended by the insertion of the word "licensed." Accordingly, as the law now stands, no pharmacist in this State is exempt from jury-duty, unless, 1st, he is licensed by the Board of Pharmacy of the City and County of New York; and, 2d, unless he is actually engaged in his profession as a means of livelihood.

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THE question of remunerative occupation for women who have received a good education, and are capable of doing something better and more profitable than sewing for shops, attending to children, teaching, etc., is yearly receiving more attention from the public. The *New York Tribune* has recently spoken of pharmacy as being well adapted to the needs and capacities of women of this class, and the remark was made that in England a number of females had already adopted this profession.

It is known, by those who are familiar with the subject, that in Great Britain the registration of women as pharmacists has only been accomplished through persistent efforts. In Belgium, the opposition has been so decided that it was not until popular interest was awakened, that females were allowed to acquire the legal qualifications necessary for the practice of pharmacy. In the United States, on the contrary, no impediments whatever have been offered, so far as we are aware. The doors of pharmaceutical colleges and societies have always been cordially open to them, and the fact that but few have taken advantage of their opportunities in this direction is owing solely to their disinclination to do so.

The reason for this is, we believe, that as a rule many women of the class referred to are not disposed to be self-supporting. The large majority of those who are of an age at which they are capable of learning the details of a profession are, quite naturally, looking forward to becoming wives, and being supported by some one else; and they are not inclined to devote their time to the acquisition of a knowledge of pharmacy, or of any other business or profession that would oblige them to forego many social enjoyments. They have the feeling that at any day they may be called to enter upon more congenial duties; and that a neglect of such social opportunities as they possess may interfere more or less with their chances of happy marriage. The pursuit of pharmacy would for them be but a makeshift, and would involve too much self-denial.

During the past ten years three women, we believe, have entered the New York College of Pharmacy, and one of these did so merely as a preliminary step in the study of medicine.

Other considerations have unquestionably had an influence, among which is the feeling that women who enter a shop, or take a position behind the counter, thereby lose the social status which nearly all who are capable of becoming pharmacists are desirous of holding. While this feeling exists we need not expect to see any considerable number of female pharmacists. Women, as we know them, are far more likely to adopt a profession that does not ally itself so closely with matters of trade and commerce; and unless the social status of women is far different across the ocean from what it is here, we believe that our brethren abroad have given themselves a great deal of unnecessary trouble in opposing the qualification of women for the pursuit referred to.

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ON another page will be found a notice of the forthcoming meeting of the New York State Pharmaceutical Association, to which the attention of our local readers is called. Aside from the interest likely to be attached to the purely scientific proceedings, there will come up for discussion, in the course of the meeting, the proposed law to regulate the practice of pharmacy in the State, the bills now before the Legislature to regulate the sale of poisons, and to prevent adulterations. It is evident that there are many reasons why the profession throughout the entire State should be well represented, and we hope that the cordial welcome that the pharmacists of Syracuse are preparing for those who attend, will be fully equalled by the effort which all who are interested will make to be present.

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MR. THOMAS A. EDISON, of Menlo Park, N. J., has turned the force of his "inner consciousness" from the invention of scientific toys to "patent" medicines.

# MATERIA MEDICA, PHARMACY, AND THERAPEUTICS.

[ORIGINAL COMMUNICATION.]

## EXAMINATION OF DEPOSIT IN COMMERCIAL DILUTED PHOSPHORIC ACID.

BY P. C. JENSEN, PH.C.

DURING the last six months I have been particularly interested in regard to a peculiar organized deposit, existing in a number of specimens of Ac. Phosphoric. Dil., of commercial grades which have come under my observation.

If this diluted acid is made, either by burning phosphorus in air or oxygen, resulting first in the production of phosphoric anhydride ($P_2O_5$), which is afterwards dissolved in water; or, by the process of the Pharmacopœia, namely the action of nitric acid upon phosphorus, the resulting product is not likely to be contaminated with foreign substances or the germs of organic matter.

On the other hand, if this acid is made by dissolving glacial phosphoric acid in water, as prescribed or directed by some formulas yet in use among certain manufacturers on Continental Europe, or by the alternative process in the present U. S. Pharm., there is reason for the introduction of such matters.

Glacial phosphoric acid is made from bones, by a roundabout process, which is very apt to result in an impure product. It is to these conditions in its manufacture that I attribute the cause of the organized deposit in the diluted acid.

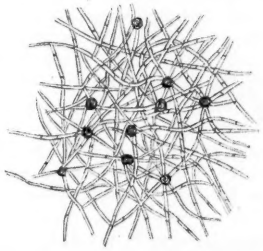
This deposit, like all fungous deposits, will increase by exposure to the atmosphere, with but very slight increase when air is completely excluded.

*Chemical Behavior of the Deposit.*—1st. To a small portion of the deposit I added concentrated sulphuric acid, the substance turned black (charred); evidence of organic matter. 2d. To a small portion of the deposit I added hydrochloric acid and potassic chlorate, until the organic matter was oxidized, or broken up as shown by the change of the solution from green to yellowish, constantly keeping up the measure by addition of water with constant stirring on a water bath at a temperature of 60° C., until sufficiently concentrated and until the chlorine was all expelled. I then added ammonic carbonate, which produced a white prec. Another portion I treated with a solution of ammonic oxalate, producing calcic oxalate, insoluble in acetic acid, but soluble in hydrochloric acid—evidence of calcium.

I was unable to obtain any magnesium salt in the deposit, but I found a trace of hydrochloric acid; no silicate was present.

3d. The clear supernatant liquid of acid. phosph. dil. by addition of ammonic hydrate and ammonic carbonate formed a white precipitate, which redissolved in acetic acid with effervescence. Then, on addition of ammonic oxalate, white calcic oxalate formed, insoluble in acetic, but soluble in hydrochloric acid. This furnishes conclusive evidence of lime both in the supernatant liquid and in the deposit.

*Microscopical Examination of the Deposit.*—For microscopical examination I employed a magnifying power of 75 diameters, being unable to use the high power with equal accuracy.



The minutest quantity under the low power represents a fibrous network very analogous in appearance to the Tela Contexta, as found in the mosses, anastomosing and exhibiting very well defined oblong muriform cells placed end to end. In the interstices of its central ramifications are seen small bodies resembling nuclei. These nuclei are nearly double the size of the diverging fibres constituting the mass of the deposit. The color of the deposit is of a grayish white, with diffusive and elastic properties.

ALBERT LEA, Minn.

[ORIGINAL COMMUNICATION.]

## CRUDE SEMI-SOLID PETROLEUM AS A THERAPEUTIC AGENT.

BY M. M. GRIFFITH, M.D.

I SEND herewith a sample of crude (semi-) solidified petroleum, such as accumulates on the tubing and casings of the wells of the Pennsylvania oil regions, is as it occurs in its natural state, without any manipulation.

I have used it very extensively, in the form of pills, during the last year in chronic bronchitis, asthma, catarrh, and incipient phthisis. At my suggestion, many physicians have prescribed it with the most flattering results. It is now undergoing trial in several hospitals and eleëmosynary institutions of the South. I have prescribed it in over a thousand cases indiscriminately, without receiving a single unfavorable report. Most of the cases were supposed to be tuberculous; from statistics accumulating, I think the report of cures in incipient tuberculosis will show an average percentage of cures of about 75%. In the advanced stages it affords more relief than any other remedy. I have usually advised patients to take it in connection with any medicine they were

using that they thought beneficial; but most of them, after using the pills a few days, have relied upon them altogether.

The first effects of the pills were found to be expectoration, alleviation of the cough, relief to the breathing; night-sweats are diminished or altogether controlled, appetite and strength are gradually restored. I think it will show a larger percentage of cures in acute phthisis than any other remedy. In chronic bronchitis and obscure lung troubles it acts almost specifically.

The crude petroleum has been long known as possessing valuable curative properties in chronic lung diseases; but the excessive nausea and the disagreeable eructations it produces has prevented its protracted use. I was led to the use of the semi-solid by the facility with which it can be made into pills. To further solidify it and get it into pill mass, I have used the following formula: ℞ Petroleum mass, ℥ i.; Pulv. Cubebæ, Pulv. Doveri, āā ʒ vi., to make pill-mass (pills, 5 grs.). This, however, may be left to the judgment of the prescriber, as something m ist be used to make the mass of the proper consistency. I thought it advisable to use something beneficial. The dose of the semi-solid mass I have found to be about 2 to 3 grs., which an ordinary five-grain pill of the compound mass contains. It being harmless, no particular nicety may be paid in regard to dose; but much more than this will produce disagreeable eructations, tasting strongly of oil. I have named the semi-solid oil "crude petroleum mass" for convenience. It seems to be nothing more than the ordinary oil, less its volatile constituents, gases, etc. It accumulates on the iron of the wells that have long been flowing or pumped.*

IRVING, N. Y.

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**Henry C. Lea,** the publisher, has recently retired from the active business, leaving it to those who have for some time assisted him in its management. The new firm consists of Messrs. C. M. Lea (his son), H. M. Barnes and C. C. Febinger, as *General Partners*, and Mr. H. C. Lea, as a *Special Partner*. The firm name is now H. C. Lea's Son & Co.

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* The sample accompanying this communication is a dark-brown unctuous mass, of the consistence of tallow, in thin layers of a yellowish-brown color, and somewhat transparent, and possesses the characteristic odor of petroleum, without being at all nauseating. If the substance were melted and filtered through coarse animal charcoal, it would most probably result in some such product as vaseline. The internal use of petroleum and some of its products, particularly those of a more solid consistence, has at various times been advocated. In France, the native petroleum occurring in some places, notably that obtained at Gabian in the Department Hérault, known as *huile de Gabian*, has acquired quite a fame as a remedy for diseases of the lungs.

In the "American Dispensatory" of John Redman Coxe, the second edition of which was published in Philadelphia in 1810, the author refers to the employment of *Rock Oil* in this manner: "One of the varieties of petroleum known as *Seneca Oil*, found near the lake of that name in New York State, has long been celebrated, especially for its value in rheumatism;" and John King, in the "American Dispensatory" (10th ed., Cincinnati, 1876, p. 617), says: "*Mecca oil*, a mineral oil from a place near Mecca, Ohio, is said to be useful in bronchial, laryngeal, and pulmonary affections, and is sold at most extravagant prices for such purpose."

The medicinal value of this particular preparation doubtless depends less upon the paraffin (which is probably the ingredient that renders the sample of such consistence) than upon some of the constituents of petroleum, which somewhat partake of the medicinal properties of phenol, cresol, etc. These are already used by inhalation, and other ways, in chronic lung affections, with more or less advantage. The substance here referred to simply offers another form for their administration. We are much inclined to doubt whether the writer's belief in the percentage of cures will be borne out by the results of further experience.—ED. N. R.

[ORIGINAL COMMUNICATION.]

## NOTES ON RESINA PODOPHYLLI.

BY JOSEPH FEIL, PH.G.*

A FEW experiments were made with the resin of podophyllum in order to determine which of the conflicting statements in regard to several of its qualities made in standard works were correct.

The statements referred to are the following:

I. Yield.

| | | |
|---|---|---|
| National Dispensatory | II. Ed. p. 1222 | 4 to 5% |
| U. S. " | XIV. Ed. p. 1431 | 3.12 to 5.25% |
| Pharmacographia | p. 36 | 3½ to 5% |

II. Proportion soluble in ether.

| | |
|---|---|
| National Dispensatory | 15 to 20% |
| U. S. " | 75 to 80% |
| Pharmacographia | about 50% |

III. Color.

| | |
|---|---|
| National Dispensatory, | grayish-white—yellow by alum. |
| U. S. " | light-brown. |
| Pharmacographia, | light brownish-yellow with tinge of green. |

IV. An extraordinary yield.

G. H. C. Klie (1877) claims with alcohol .930 and precipitating by alum to have obtained a yield of 71¼%. (Nat'l Dispensatory, II. Ed. p. 1222.)

V. Active medicinal portion.

U. S. Dispensatory says, "Evidence seems to point to the resin soluble in ether as the most energetic or even as the only powerful cathartic part of Resina Podophylli."

Pharmacographia seems to consider both the resin soluble and the resin insoluble in ether as equally purgative.

*Abstract and Results of Experiments.*—A quantity of podophyllum was powdered and divided into three equal parts; each was respectively exhausted with alcohol of .835, .891 and .935, then the percolates were concentrated to a small bulk and each part divided into two equal portions, which gave me six concentrated tinctures. Three of these tinctures were precipitated as directed in the U. S. P. '70, and the other three were precipitated in the same manner, except using ½ oz. alum in place of the

* From a Thesis presented to the College of Pharmacy of the City of New York.

muriatic acid. All the precipitates were dried in a cool place (a dry cellar).

The results were as follows:

| Precipitant. | Strength of alcohol. | Yield. | Proportion soluble in ether. | Color. |
|---|---|---|---|---|
| Muriatic Acid. | .835 | 3.02% | 40% | Light grayish-white. |
| | .891 | 3.14% | 60% | Light-gray. |
| | .935 | 1.64% | ... | Dark. |
| Alum. | .835 | 3.19% | 90% | Light greenish-yellow. |
| | .891 | 3.75% | 80% | Greenish-yellow. |
| | .935 | 2.26% | .... | Dark yellowish-green. |

From the quotations made, taken in conjunction with my experiments, I draw the following conclusions:

I. Alcohol of about 70% would be a better menstruum for extracting "podophyllin" than the officinal alcohol, as the yield is larger and apparently as good as that obtained with the officinal alcohol.

II. By precipitating with alum the yield is larger, and if the ether test is a criterion of quality (see U. S. Dispensatory), it is immensely superior to the article precipitated by muriatic acid. It is also worth noticing that considerable of the Resina Podophylli in the market is alum-precipitated and on inquiring of druggists who have dispensed both kinds, they say they know of no difference between the two except in color.

III. The proportion soluble in ether seems to be due to the method used in its preparation; the variation in color is also to be traced to the same cause.

IV. Mr. Klie's statement in regard to yield with .930 alcohol seems to be incorrect, as both my products made with about 50% alcohol were so small in yield and poor in color that they were not worth experimenting with.

I believe the U. S. P. '70 formula would be much improved if the following changes were made:

1st. The use of 70% alcohol instead of the officinal alcohol.

2d. The use of alum instead of muriatic acid.

3d. The tincture to be further concentrated than is done at present (see NEW REMEDIES, VIII., No. 9, p. 262).

4th. The product to be dried in a cool place (a dry cellar is excellent), instead of at a gentle heat.

**A New Journal.**—There has recently been started, in this city, the *Deutsch-Amerikanische Apotheker-Zeitung*. Organ für Apotheker, Aerzte, Chemiker und Droguisten, 4to, fortnightly. $2.50 per year. Editor, George W. Rachel, M.D., 5 Gold street.

Although the journal appears to be well edited, we doubt whether a German publication will receive the support which will warrant its continued publication.

### The Calabar Bean.*

*Physostigma venenosum* Balfour, is a perennial climber, resembling the common scarlet runner or scarlet bean (*Phaseolus multiflorus* Willd.) of our gardens, but having a woody stem often an inch or two thick below, and climbing to a height of fifty feet or more. Its leaves are alternate, large, and pinnately-trifoliolate; petiole stiff, thickened at the base, with small triangular stipules; leaflets stalked, with short thickened petiolules and small stipellæ, 3–6 inches long, and ovate-attenuate. The flowers are rather large, in long, lax, pendulous zigzag racemes.

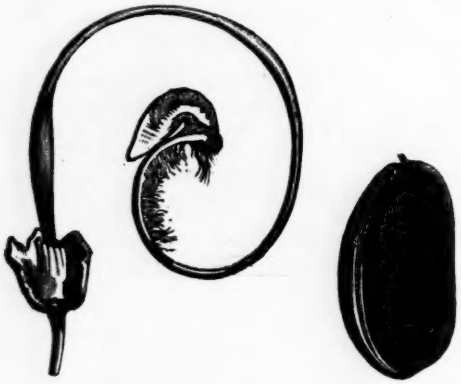
Calabar Bean (Physostigma venenosum).

Calyx cup-shaped, gibbous above, smooth, somewhat fleshy, five-lobed. Corolla papilionaceous: standard beautifully and finely veined, folded together and curved back into almost a ring; wings free, almost hidden by the standard; keel half concealed, greatly prolonged and stiffly twisted into a somewhat spiral beak. Stamens 10, the upper one free; the other 9 combined for about half their length into a sheath around the pistil; anthers small, similar. Ovary stalked; style (see Fig.) about 1½ inch. long, filiform, curved with the keel, and becoming thickened

* After *Bentley and Trimen's Medicinal Plants* and the *Pharmacographia*. The illustration is after *Baillon, Histoire naturelle des Plantes*.

and stiff in its twisted beak, where it forms a ring densely bearded on the inner side of its distal half with crisp hairs, and provided at the extremity with a triangular, solid, fleshy, reflexed, beaked appendage. Pod 4–7 inch. long, compressed, pointed at the end, 2-valved, horny, pale brown, with a network of transverse veins, thickly lined within with a white loose woolly tissue.

The seeds, commonly known as Calabar seeds, are 1 to 1⅜ inch. long, about ⅝ inch. broad, and ¼ to ⅝ inch. thick, weighing on an average 67 grains each (Hager: 4.1 gm.). Their outline is oblong and subreniform, one side being straight or but slightly incurved, the other boldly arched. The latter is marked by a broad furrow, ⅛ inch wide, bordered with raised edges and running from the micropyle, which is a small funnel-shaped depression, quite round to the opposite end of the seed. In the middle of this remarkable furrow the raphe is seen as a long raised suture running from end to end.



Pistil. Seed.

The surface of the seed is somewhat rough, but has a dull polish; it is of a deep chocolate brown, passing into a lighter tint on the ridges bordering the furrow. The latter is black, dull, and finely rugose. When the seed is broken the cotyledons are found adherent to the testa with a large cavity between them. The air thus included causes the seeds to float on water; but they sink immediately when broken. These seeds have scarcely any taste, or not more than an ordinary bean, nor have they any odor in the dry state. After being boiled or when their alcoholic tincture is evaporated, an odor suggesting cantharides is developed. They yield their virtues entirely to alcohol, and imperfectly to water. Sometimes other seeds, particularly those of a *Mucuna*,* and those of the Oil Palm have been substituted for them, but the slightest examination suffices for their detection.

* Compare NEW REM., 1879, 128, 200.

The plant (which was first made known by Daniell, in 1847) is a native of an apparently restricted portion of western tropical Africa, near the mouth of the Niger and Old Calabar, in the Gulf of Guinea; it seems to be somewhat rare even there, and is said to be destroyed everywhere by order of the native government, except where it is preserved for the use of justice, as an ordeal. The plant has been introduced, however, into Brazil and India. Calabar beans contain about 48% of starch, 23% of albuminous matter, a little fatty oil, mucilage, sugar, and other unimportant ingredients, and two alkaloids, on which their activity depends. Hesse has, besides, discovered in them a neutral crystallizable substance, closely allied to cholesterin, which he has termed phytosterin.* One of the alkaloids was discovered in 1863, by Jobst and Hesse, and named *physostigmine;* it is principally contained in the kernel (according to Tison, in the granular protoplasmic particles, which alone acquire an orange tint by the action of weak caustic alkalies), though Fraser has shown that the shells are not devoid of active principle. Jobst and Hesse obtained the alkaloid at first only as an amorphous mass, but succeeded, subsequently, in obtaining it perfectly colorless and tasteless. They found that, on heating it to 212° F., it reddened, owing to decomposition commencing. In 1865, Vée and Levin, by a somewhat similar process, obtained an alkaloid in the form of colorless, rhomboidal, tabular crystals, of a bitter taste, but agreeing otherwise tolerably well with physostigmine. They named this substance *eserine;* Tison and other chemists regard *eserine* as pure *physostigmine;* but Flückiger and Hanbury remark that "at present we feel hardly warranted in admitting the identity of the two substances." The activity of eserine or physostigmine (?) is indicated by the fact that if a single drop of a solution containing only 1 part in 1,000, be placed within the eyelids, it causes great and lasting contraction of the pupil. A peculiarity of the alkaloid, according to Vée is, that if to its solution in water a little potash, lime, or soda be added, a red coloration is produced, which rapidly becomes more intense. The color is not, however, permanent, but gradually passes into yellow, green, and blue. The same property is also said to be possessed by the alcoholic extract of Calabar bean. Harnack and Witkowski in 1876, ascertained the presence of another alkaloid in the seed, which they called *calabarine*. It is nearly insoluble in ether, and differs from physostigmine in its physiological action, having tetanic properties resembling those of strychnine. Calabarine is consequently not found in those preparations of calabar bean which have been obtained or purified by ether.†

* See REW REM., 1879, 34.

† The pharmaceutical preparations of Calabar bean

The medical uses of Calabar bean are: internally as a powerful sedative, in small doses, in tetanus, chorea, epilepsy and other nervous affections, in the treatment of poisoning by strychnia, general paralysis of the insane, etc. Externally it is used as an ophthalmic remedy, to contract the pupil. In cases of poisoning by Calabar bean, atropia has been found useful.

### The Manufacture of Olive Oil in Provence.

FROM a detailed description of the manufacture of olive oil in the establishment of E. Jourdan de Jauffret et Fils in Salon (Depart. Bouches du Rhône, Southern France) the *Pharmaceutische Handelsblatt* (No. 1, 1880) gives the following abstract:

The manufacture of olive oil must be commenced in the first half of November, because the fruit ripens at this time in the Provence. When it is once begun, it must be continued uninterruptedly, day and night, until the close of the harvest. According to circumstances, the harvest may continue during three or four months.

In the establishment named above, eighteen persons are sufficient to carry on all manipulations. They are divided into two gangs, which relieve each other in the morning and at night. The quantity of fruit consumed daily amounts to about 1,000 dekalitres (or 2,645 gallons) of olives, which yield 1,200 kilograms of the best grade of oil. The apparatus is so arranged that extra rich harvests may be worked up with equal celerity; for it would cause great damage to the quality of the product, particularly of the finest grade of oil, if the freshly gathered olives had to remain for some time in storage before being worked up. Nevertheless, there are some manufacturers who prefer the kind of fermentation induced by the delay, because they hold that the quantity of yield is thereby increased, owing to the greater facilities with which the oil separates from the fleshy cells. But experience has shown that the increase in product can only be gained at the expense of the quality of the oil, and that the larger yield does not balance, financially, a smaller amount of better product. In Jourdan de Jauffret's factory all delay is avoided, and, by judicious management, the yield is nevertheless as large—if not larger—than if the olives had been allowed previously to ferment.

Before the olives are brought to the mill, they have been previously carefully spread out upon the floors of well-ventilated store-houses, where they are allowed to remain for three days, if the wind is south, and for four or five days, if the wind is north.

The first operation consists in crushing the olives between two granite-stones, turning against each other vertically. The mass is then transferred, in rush-baskets, to an iron press, where it is subjected to a very gentle pressure. This produces the so-called virgin oil (huile vièrge) to which the Provence oils owe their reputation.

After this first pressing, the mass in the baskets is again comminuted, and again subjected to a somewhat stronger pressure in a lever-press. The product constitutes the well-known commercial finest oil. The mass is now removed from the baskets and again transferred to the mills, where it is completely ground up, when it is once more packed into the baskets and subjected to hydraulic pressure. During this latter operation the effect of partial fermentation is utilized, by pouring boiling water on the mass in order to facilitate the separation of the oil. By this method of manipulation, not only a larger yield of oil is obtained, but, at the same time, the deterioration of the larger portion of the oil contained in the olives is prevented, because only the very last pressing is performed with the aid of heat. And the last product is even superior to that obtained from fermented olives, since the latter assume frequently a musty, putrid odor which may contaminate the oil of the first pressing—a drawback which is avoided by using hot water.

The whole process must be conducted under the observance of all possible care and precautions. Columelle even forbids the lighting of fires or lights in the mills during the manufacture, asserting that the smoke of a single lamp may injure the quality of the oil. This precaution was necessary in the old factories, and it must be confessed that, even at the present time, the larger number of the mills in the Provence have a very antiquated construction, and are nearly all erected in cellars below the surface of the ground, where air and light penetrate only with difficulty, and where it is almost impossible to deprive the air of bad odor. In addition to this the majority of the mills are worked by mules, which walk around upon a track covered with their manure. All of this will give some idea of the want of cleanliness existing in the mills.

The manufactured oil must be treated with great care. Th. de Saussure has shown that the rancidity of olive oil is due to absorption of atmospheric oxygen, and that this absorption is promoted by heat. In the establishment of Jourdan de Jauffret, the oil, after being clarified by filtration, is poured into large stone jugs, kept cold, in which it soon congeals. The finest grades of oil may in this manner be preserved for years without losing their fine flavor or freshness.

The name "infernal oil" ("huile d'enfer") is applied in the Provence to the refuse oil which collects on the surface of cisterns (into which the waters used for scalding the olive-pulp is allowed to run). This is removed from time to time, and any free fatty acids present removed by cautious treatment with caustic soda. The residuary oil is used as a lubricant for machinery, as well as for wool.

should be deprived of this dangerous body, which interferes with the proper uses of the drug, namely that of a powerful spinal sedative.—ED. N. R.

### Improved Filterpresses.

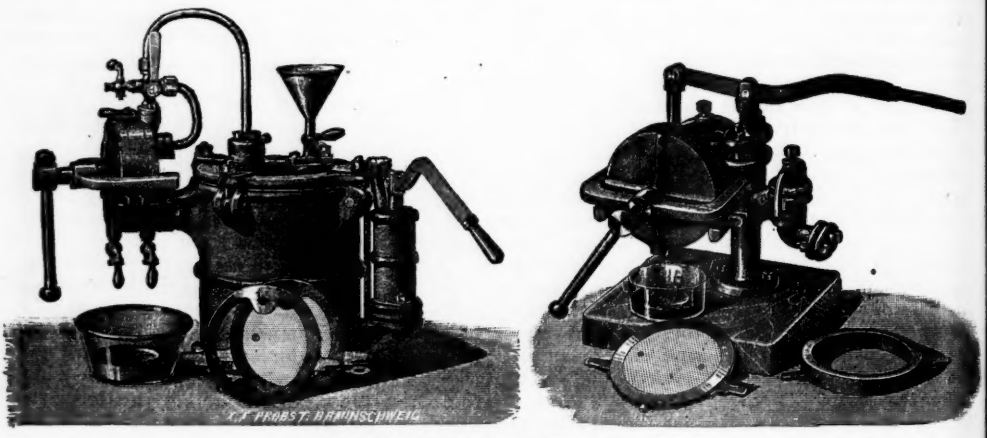
MESSRS. WEGELIN & HUBNER, of Halle, Germany, whose filter-presses we have already described and figured in our volume for 1878 (p. 248), have placed an improved from of press on the market, which is specially designed for laboratories, and is furnished in two sizes, the larger being intended for heavy work, and the smaller more for experimental purposes.

The power required to force the liquid to be filtered through the press-cloth is obtained by means of compressed air acting on the surface of the liquid in the montejus,* which constitutes the large cylinder surmounted by the funnel. At the right of the montejus is situated an air-pump, for compressing the air on the surface of the liquid and forcing it through the curved pipe into the filtering apparatus. Behind the air-pump is seen a narrow tube, which represents a gauge to indicate the height of the liquid within the apparatus. The large stop-cock at the end of the downward bend of the curved pipe has three ways. When turned as shown in the cut, and the small outer faucet is turned off, it carries the liquid to be filtered to the back of the filtering surface, and the clear filtrate escapes from the stop-cocks at the bottom. If it is intended to wash the precipitates contained in the filter, the montejus and pipe leading to the filter must, of course, first be washed. The compressed air having been allowed to escape by a small faucet, the two stop-cocks at the upper part of the filter, one situated to the left of the three-way cock, and the other behind the filter-box, are opened, and after water or some other liquid has been poured into the montejus, it is driven over, by compressed air, into the filtering apparatus, where it escapes from the open stop-cocks. As soon as the apparatus is clean, the stop-cocks are closed, and the three-way cock turned in a horizontal position; at the same time one of the bottom stop-cocks is also shut. The proper liquid having now been introduced into the apparatus, it is forced over by compressed air, and after passing through the precipitate, will escape from the stop-cock at the bottom, which remained open.

This form of press is particularly recommended to apothecaries, chemists, etc. It has a comparatively large capacity and is easily handled. The total filtering area is 400 square centimetres, and the capacity of the montejus 16 litres (about 4¼ gallons).

The smaller form of press consists of a force-pump, on which a small filter-press with one chamber is screwed. The total filtering area is 400 square centimetres. The whole is mounted on a wooden plate. Three frames of 10, 20, and 30 millimetres thickness belong to the press, of which only one is used at a time. The press is combined with an apparatus for washing precipitates within the filter. Before putting the apparatus in operation, the suction pipe of the pump must be brought in connection with the substance to be filtered. The outlet cocks must be open. The pump is then set at work and pumping is continued until the pump commences to go heavy and the liquid leaves the press only by drops. By making proper connection, by means of a rubber hose, with a water-pump or high reservoir, the precipitates within the filter may be thoroughly washed. Among the firms in this country who use these presses are: Powers & Weightman, and Harrison Bros. & Co., of Philadelphia; Charles Regen, and Matthieson & Wiechers, of New York.

The prices for the Laboratory Filter-press are: about $88 (iron-press), and about $107 (bronze-press; montejus and air-pump being in either



Wegelin & Hubner's Improved Filter Press.

* *Montejus*, from the French *monte-jus*, literally "juice-mounter," "juice-raiser," is a closed apparatus containing a liquid which is to be raised to a higher level or to be forced into another compartment by means of compressed air, or a pressure of steam applied to its surface.

case of iron). The small experimental pump costs: in *iron*, about $34, in *bronze*, about $48. These figures are only approximative; exact quotations will be furnished by the manufacturers.

**Spence's Metal: a new Metallic Compound of wide Applicability.**

At a meeting of the Society of Arts of London, held on Feb. 11th, Dr. Granville Cole read a paper on "A New Metallic Compound" which bids fair to be of such great usefulness that we hasten to lay on abstract of it before our readers:

*Discovery of the Metal.*—Nearly a year ago, Mr. J. Berger Spence discovered that the sulphides of the metals, combined with molten sulphur, formed a liquid. This liquid, on cooling, becamed a solid homogeneous mass, possessing great tenacity, and having a peculiar dark-gray—almost black—color. Nearly every metallic sulphide which is known, combines, as experiments have proved, with an excess of sulphur, and curiously enough, nearly all these combinations have the same properties. The combination, of which I have specimens here for inspection, consists of an ore of iron pyrites containing both lead and zinc sulphides.

*Chemical Composition.*—Examining the metal from a chemical point of view, I may state, briefly, that it is a chemical compound belonging to that class known as thiates, or sulphur sulphides. Dr. Hodgkinson, chemical demonstrator at the Science Schools South Kensington, has kindly sent me the following facts. I cannot do better than quote his letter on the subject:—"It appears to be the easiest thing in the world to obtain a homogeneous casting with it. Specific gravities of portion sent gave 3.3743 to 3.7036 (reduced to 0° C.). When finely powdered, it is acted upon slowly by concentrated hydrochloric and nitric acids in the cold; in large lumps, little or no action takes place. As yet I have not been able to determine the expansion equivalent accurately; it would appear, however, to be small. The fracture is not conchoidal, as might, perhaps, have been expected, but somewhat like that of cast-iron.

"I have not had time to try many 'utilization experiments' on the substance, but I have no doubt it would be exceedingly useful in the laboratory, even, for instance, for making the air-tight connections between glass tubes by means of caoutchouc, and a water or mercury jacket, where rigidity is no disadvantage; the fusing-point is so convenient, about 340° F., that it may be run into the outer tube on to the caoutchouc, which it grips, on cooling, like a vice, and makes it perfectly tight. I don't know what you may call the material, but should think, as it seems to be more than a mere mixture, *ferric thiate* would not be a bad or inappropriate name."

*Properties of the Metal.*—I propose, this evening, to illustrate, by experiments, such as are possible at a lecture, some of the properties of the metal. I will begin by giving you a short summary of its peculiarities, and its advantages over those of other metals or metallic compounds.

1. It has a comparatively low melting-point, viz., 320° F. or rather more than 100 above the temperature of boiling water. Here, then, we have in its favor the small amount of fuel needful to supply the necessary heat for reducing the metal to a condition for use.

2. It *expands* on cooling—a property not shared by the majority of other metals or metallic compounds. I believe that type metal and bismuth are two exceptions. Later on, I think I shall convince you that, for an operation like the joining of gas and water pipes, this expanding property is one of great importance.

3. It claims to resist atmospheric or climatic influences, as compared with bronze and marble. I noticed only a few days ago how the statues in bronze, on the Holborn Viaduct, had been affected by our London fogs. And I have evidence to produce in the direction of showing the imperviousness of the metal to such degrading influences.

4. As compared with other metals or metallic compounds, its resistance to acids, used commercially, to alkalies, and to water, is certainly superior.

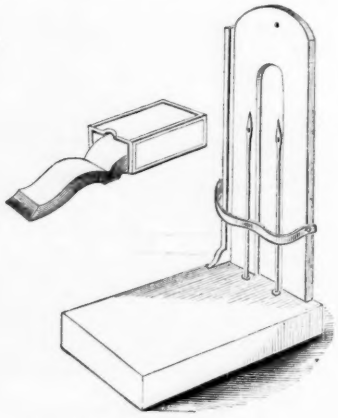
5. A smooth surface of this metal or metallic compound, now known commercially as Spence's metal, takes a very high polish. I will illustrate this to you by casting some of this molten metal on to asurface of glass. [The author also demonstrated that the metal is adapted for the purpose of type-metal or stereotyping. Besides, one curious feature connected with it is, that the metal may be cast in gelatin moulds, in which it will set so rapidly that the gelatin will not have time to melt. This property will make it possible to apply the metal to the reproduction of highly "undercut" objects.]

*Advantages of the Metal. Cheapness.*—As compared with lead, which is one of the cheapest of metals, it is one-third the weight; and, whereas the average cost of lead for the last ten years has been nearly £18 a ton, Spence's metal only costs £15. A ton of Spence's metal being three times the amount in bulk of that of a ton of lead, it is available for three times the amount of work. It may, therefore, be considered to be nearly a quarter of the price of lead, and, consequently, very considerably less than that of bronze.

*Facility of working.*—Its melting-point being very low it can be very easily prepared for pouring into a mould, and its property for expanding, when cooling, causes it to take such a perfect impression that the cast requires very little chasing after. In respect of a gelatin mould, which can cover a considerable surface of work without joints, such as one has to make in plaster piece moulding, the metal cast obtained from such a mould would require no chasing whatever.

*Resistance to the Atmosphere.*—With regard to its resistance to climatic influences, experiments have been conducted in this direction with complete success. A polished surface of the metal has been exposed for six months in all weathers, without showing the least change.

*Industrial Uses.*—They may be briefly condensed as follows: In gas and water works as a luting of the pipes. In chemical works, when working with sulphuric acid at temperatures not exceeding say 200° F., the vessels, tanks, etc., may be constructed from this metal. For joining metal to stone, the tensile strain of the metal being from 650 lbs. to the square inch, 5 minutes. after setting. For coating the holds of ships. For covering the foundations of houses two or more feet out of ground, to prevent the damp from rising. For hermetically sealing bottles; for covering cloth, for covering parcels which are to be sent to hot climates; for preserving fruits or other articles of consumption, and many other purposes, some of which may suggest themselves to one or another of our readers.



**Naulty's Prescription File.**

HAVING seen an advertisement of this file, and knowing something of the trouble that many pharmacists have in preserving prescriptions in shape for future reference, we addressed a letter to the inventor in regard to it. His reply is herewith appended:

"The advantages that my file possesses over the wire and book are as follows: The papers are held securely upon two needles in such position, that for reference a prescription can be found instantly, and an unobstructed view be obtained of it while compounding. The band which passes over the needles holds the papers back when the file is filled, which will hold from five hundred to eight hundred prescriptions; they are then removed, and converted into a neat book. They are placed in pasteboard boxes, which are numbered on the outside, as from 1 to 800, with month. In this manner the prescriptions are preserved from the dirt and dust. The prescriptions should be numbered at the bottom of paper. As prescriptions vary in size, from an inch to a letter size, the file will hold them either upon one needle, and the larger papers by folding them to the proper size. In renewing a prescription from the book, you can see from the cut that the papers occupy no more room on the counter than the size of the paper, which in itself is a great advantage. There is also no possibility of the paper slipping, which sometimes occurs on the wire in renewing. The objection to the big book, aside of its bulk, is the trouble in pasting, and the possibility of an errror in renewals, from the number of prescriptions exposed to view; with my file these difficulties are obviated. This file has been practically tested for some years by myself and many others, and has given general satisfaction. It is certainly an improvement on the wire and book, and as such I believe will be appreciated by all druggists." W. H. NAULTY.

345 S. Third st., Philadelphia.

**Duboisine identical with Hyoscyamine.**

PROF. A. LADENBURG, of the University of Kiel, who has already made several important discoveries regarding the constitution and products of decomposition of alkaloids,* has just published the results of further investigations on the solanaceous alkaloids: atropine, hyoscyamine, daturine, and duboisine. Having previously shown that atropine and hyoscyamine are isomeric, he has lately succeeded in discovering a method by which he will be enabled to decide on the nature of their relationship. But, while this portion of the investigation has not yet been published, he has meanwhile proved that *duboisine* and *hyoscyamine* are actually identical. We give in the following a translation of his paper, contained in the *Berichte der Deutschen Chemischen Gesellschaft* (1880, 257):

"A short time ago a new alkaloid appeared in the market, which is derived from an Australian plant, *Duboisia myoporoides* † R. Br. This is now most generally classed with the Solanaceæ, although it much differs morphologically from *Atropa* and *Hyoscyamus*. Regarding the preparation and properties of the alkaloid but few data are published, among which those of Gerrard † appear to be alone of importance. The latter described the alkaloid as a yellow oil, which is closely allied, both chemically and physiologically, to atropine; he even seems to believe that both may turn out to be identical, although he has observed several differences between them. Among the known properties of duboisine, its mydriatic effect is the only remarkable one, and

* See the abstract of the author's paper on the synthesis of atropia, in this journal, 1879, 231.

† See NEW REM., 1879, 230, where also *Duboisia Hopwoodii*, Pituri, is described and illustrated.

this has procured for it a place among ophthalmic remedies. Although the action of duboisine upon the human pupil closely resembles that of atropine, yet its employment is now mostly restricted to such cases where persons with idiosyncrasy against atropine or those who have become too sensitive to the latter, are to be examined ophthalmologically. This difference in intensity of action alone, between the two alkaloids, induces the conclusion that the two alkaloids must be different; and for this reason I undertook the study of the duboisine, in order to decide whether its composition is allied to that of atropine, and eventually, if it belonged to the class of bodies called "tropeïnes."

I obtained from Merck, in Darmstadt, two grams of sulphate of duboisine, which appeared in form of a brown resin, being evidently the residue of an evaporated aqueous solution. The salt is hygroscopic and easily soluble in water. From the solution, carbonate of potassium precipitates an oil which does not become solid. The reactions resemble those of atropine, but the precipitates are almost always resinous. According to the experience which I acquired when attempting the purification of hyoscyamine, I directed my attention chiefly to the gold-salt, and soon succeeded, by fractional precipitation—that is by removal of the first precipitated resin, and letting the afterwards separated oil stand quietly for some time—to cause the latter to solidify. The gold-salt thus obtained was recrystallized three or four times from hot water, and was finally obtained in the same beautiful, brilliant crystals which are so characteristic of the hyoscyamine-gold combination. After drying, it possessed, like the latter, the melting point 159° C., and likewise the same ultimate composition:

$$C_{17}H_{23}NO_3.HCl.AuCl_3*$$

The double gold-salt was decomposed in warm aqueous solution by hydrogen sulphide, the sulphide of gold filtered off, and the colorless filtrate concentrated to a small bulk. After cooling, it was treated with carbonate of potassium in excess, whereby a precipitate was produced, at first amorphous and gelatinous, but soon transforming itself into fine small needles. These were separated by filtration, washed with a little water, and then dissolved in chloroform, in which they are very soluble. This solution was shaken twice with a little water to remove any remaining traces of carbonate of potassium, and finally evaporated spontaneously in an exsiccator. There remained a distinctly crystalline, rather hard mass, of a melting point of 106.5° C., while that of pure hyoscyamine had been found to be at 108.5° C. The analysis coincided very closely with that of *hyoscyamine*, the small loss probably arising from still adhering traces of carbonate of potassium.†

The qualitative reactions of this base are likewise identical with those of hyoscyamine. The latter I have not yet made public; but the following are identical for both alkaloids: Their solution in hydrochloric acid, after dilution, yields, with picric acid, an oil which almost instantly solidifies into handsome regular tablets. Platinic chloride produces no precipitate. Iodine in iodide of potassium produces immediately a precipitate of a crystalline periodide. Tannin produces a faint cloudiness, and iodohydrargyrate of potassium a white, amorphous precipitate.

By the foregoing results I believed to have proved that *duboisine* and *hyoscyamine* are identical."

* Found: C 32.23, H 4.00, Au 31. | Calculated: 32.48, 3.82, 31.32

### Daturine Identical with Hyoscyamine and Duboisine.

PROF. LADENBURG, in a subsequent number of the *Berichte* (Vol. XIII., 1880, p. 380), communicates a paper in which he shows that there can hardly be a doubt but that daturine is identical with hyoscyamine and duboisine. Planta originated the theory that daturine is identical with atropine. But although the results of Planta's experiments seem to confirm this view, yet recent investigations have shown them to differ in several particulars. The author converted a rather considerable quantity of Merck's daturine into the double-gold salt, which was obtained at first of an oily condition, but shortly afterwards solidified. After being recrystallized from hot water, it was obtained in golden-yellow, shining scales, exactly like the hyoscyamine-gold compound, and possessing the same melting point. The analysis led to the formula: $C_{17}H_{23}NO_3HCl.AuCl_3$. After separating the gold by hydrogen sulphide, the alkaloid was precipitated by carbonate of potassium, and after being obtained as a hard, crystalline mass, it was recrystallized from hot toluol, from which it separated, on cooling, in needles. These had the same ultimate composition and reactions as hyoscyamine.

From these investigations, so far as they are completed, it appears that there occur in nature *only two mydriatic alkaloids*, namely: *atropine* and *hyoscyamine*, which are isomeric in composition, and otherwise very closely related.

### Improvements in Tubes for conducting Gases into Liquids.

DR. G. VULPIUS, of Heidelberg, has devised an improvement in glass-tubes which are used for saturating liquids with certain gases. Whoever has had much occasion to prepare solutions of gases, such as chlorine water, sulphurous

† Found: C 70.17, H 7.82 | Calculated for $C_{17}H_{23}NO_3$: 70.59, 7.95

acid, etc., will know how difficult it is sometimes to properly regulate the rate at which gases pass through the various absorption flasks. For instance, in the case of chlorine water, it is necessary to choose rather wide tubes, to prevent their accidental occlusion by chlorine hydrate. In consequence of this, the large bubbles of gas given off from the orifice of the glass-tube dipping into the liquid will often rapidly traverse the liquid without being fully absorbed, although the water is not yet saturated. It is customary to guard against a waste of gas by arranging a series of absorption flasks in a row, so that the next flask will be able to absorb what has escaped the preceding one. But this arrangement is often hazardous, because the pressure in the generating flask is proportionately increased. It seemed therefore desirable to devise some means by which the current of gas could be split up into a large number of minute bubbles, each to traverse its own road. The insertion of capillary tubes into the end of the delivery tube was tried, but was found to be useless, since the separated bubbles on issuing from the orifice reunited again into one large bubble. Finally, the difficulty was overcome by perforating the glass tube near its end with a large number of minute holes, from each of which the gas should issue. But, to prevent the different bubbles from rolling upwards along the tube and thus reuniting with each other, the perforations were made so that they were situated in the summit of little projections blown from the tube. Of course, these holes must be very small, so that even the lower ones will have work to do. Such tubes are made, according to Dr. Vulpius, by the firm of Warmbrunn, Quilitz & Co., of Berlin, in any dimensions, perforated near the end with about 30 minute holes, at the price of 70 pfennige (about 17 cents) each.—*Pharm. Zeit.*, No. 87.

### The Oil Palm, and Palm Oil.

ACCORDING to the *Colonies and India*, that portion of the west coast of Africa which lies south of the River Volta furnishes the principal supplies of palm oil. Nearly 1,000,000 cwt. of this oil are annually exported to Great Britain, of the value of $7,500,000, its principal use being in the manufacture of soaps, perfumery, candles, and similar articles. Among the natives it is highly valued, both for food (taking the place of butter), for lighting and cooking purposes, and for anointing the head and body. The so-called oil, which is rather a fatty substance, resembling butter in appearance, is obtained from the fruit of several species of palms, but especially from the one known as *Elais guineensis* L., which grows in abundance on the western coast of Africa, and from which it takes its specific name.

So thickly do these trees grow, and so regular and rapid are the supplies of fruit, that in some localities, where the regular collection of the produce is not practised, the ground becomes covered with a thick deposit of the oily, fatty matter produced by the ripe berries. Deposits of palm oil, which may almost be called "mines" of vegetable fat, exist in some parts of the gold coast, and which, if not in themselves worth working, at least practically illustrate the natural wealth of the country in such productions, and indicate its undeveloped resources. These "mines" would probably not repay the cost of exploration, as the palm oil is apt to become rancid and valueless for its general uses after long exposure, though for such purposes as candle-making these deposits might still be valuable.—*Scient. Amer.*

From a recent report on explorations in Southwest Africa by Hermann Soyaux, the *Pharmaceutische Handelsblatt* makes the following extract respecting the oil palm.

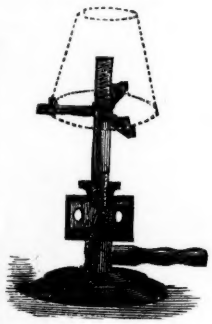
The female flower-cluster is developed into a heavy conical drupe, resembling a gigantic strawberry. The single fruits, of about the size of a prune, are closely pressed together, and vary in color from the finest yellow to the darkest violet or black. This drupe is developed four times each year, of an average weight of 30 to 35 kilos, when ripe; the fruits alone weigh 8 to 10; the remainder being stem and remainders of leaves. Four drupes, or one year's yield of the tree, yield 32–36 kilos of oil-nuts, which, when deprived of kernels, yield 1 gallon of oil. The fatty mass which is obtained from the sarcocarp surrounding the kernels has a dull orange-yellow color and is about of the consistence of green soap. It is obtained by subjecting the whole fruits for about 30 days, buried in the ground, to a process of fermentation. The fleshy part may then be easily detached from the kernels by pounding. After being melted to separate the coarser impurities, it is allowed to cool, and, as soon as hard, it is transported to the factories of the Europeans. The latter remelt the mass in large boilers standing on a brick-hearth, and after the impurities have settled, transfer the oil, by means of faucets fixed at varying heights from the bottom, into casks for shipping.

The kernels are hard and horny, of a bluish-gray semi-transparent color, of the size of a hazel-nut, and imbedded in a hard shell of about the size of a walnut. These kernels also con-

tain a large amount of fat, which is, however, not expressed in the country, but in Europe. In all places, therefore, which produce palm-oil, these kernels (called by the Portuguese *coconette*) form a large item of export, being packed in sacks which are woven from the split leaves of the Dum-palm (*Hyphæna*).

### A New Gas-Burner.

MR. ROBERT MUENCKE, of Berlin, has constructed an improved gas-burner, which permits the regulation of the flame according as ordinary street gas or highly carburetted gas is used, that is, which permits the operator to regulate the supply of air according to the nature of the gas. The accompanying cut illustrates a single burner. The gas passes out from an orifice in the top of the cone below, and thence enters the straight tube, which may be raised or lowered by turning. If it be lowered until the cone is entirely covered, no air will be able to mingle with the gas; and it will, therefore, burn with a luminous and smoky flame. From this point the flame may be gradually changed to an almost invisible blue heating flame by gradual turning. Compound burners of this description are likewise manufactured; in the latter, however, the air-chamber is separated by a horizontal partition into gas- and air-chamber proper.—*Dingl. Polyt. Journ.*, vol. 233, p. 227.



### The Quality of Pyrogallic Acid of the Market.

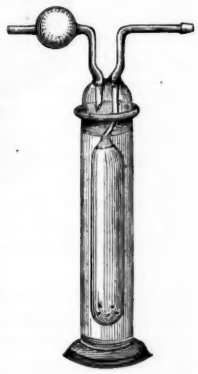
PYROGALLIC ACID is used by photographers to "intensify" negatives, that is, to cause a more abundant reduction of metallic silver upon the film. The reduction of the silver salt, say bromide of silver, by pyrogallic acid takes place only in presence of alkalies, and the intensity of the reduction increases with the quantity of the alkali, the concentration of the solution, and the influence of light and air, the latter, in the presence of alkalies, tending to oxidize pyrogallic acid. (The reducing action of pyrogallic acid on silver salts, such as the chloride, iodide, or bromide, therefore depends on the action of nascent hydrogen which combines with the chlorine, bromine, or iodine.) Prof. Vogel, of Berlin, has lately made some comparative experiments with English and German brands of pyrogallic acid, it having been asserted by an English photographer that the German pyrogallic acid, which is just half the price of the English, is very inferior in intensifying powers. Prof. Vogel's experiments were made with pyrogallic acid made by Hopkin & Williams, London, and by E. Schering, Berlin, under precisely the same circumstances. One gram each was used, and it was found that the English acid reduced 0.896 gm. of silver, while the German reduced 0.937 gm., proving that the latter is the more powerful.—*Chem. and Drugg.*

### A New Bottle "Opener."

THOSE who have occasion to open bottles containing internal stoppers know the waste and discomfort that attends the sudden expulsion of a portion of their contents before there is time to invert them over a glass. Messrs. Gardner & Co., of Meath, England, have invented an ingenious little contrivance which avoids this difficulty. To judge by the illustration, which is taken from the *Mineral Water Trade Review*, the appliance is made of glass, with a ring of rubber which forms a packing between it and the neck of the bottle. Placing the "opener" on the stopper, a little pressure or a quick blow dislodges it and at the same time seats the opener so that the contents of the bottle, in escaping, are deflected into the vessel placed to receive them.

### Muencke's Wash-Bottle.

AN improved form of wash-bottle, which differs from that of Drechsel (see NEW REM., 1879, p. 264) consists in having the tube inside of the wash-cylinder expanded into an elongated bulb with perforations near the bottom. The escape of gas from this bulb meets with less resistance than if the openings were at the bottom. — *Dingler's Polyt. Journ.*



### The Tyson Vase Engine.

THE most remarkable motive power that has been invented for some time is that shown in the adjoining figures, and is here described, on account of its adaptability to numerous uses among pharmacists, physicians, dentists, chemists, and various other industries and arts where a small power is needed, and where close watching or skilful management are not practicable. Its cost, capacity, etc., are briefly summed up in the following figures: Price, $35.00; weight, 60 lbs.; height, 41 inches; power, 1,000 foot-pounds per minute; fuel, 12 feet of gas per hour.

These engines are driven by steam, generated by a system that precludes all possibility of an explosion.

The cuts, below, represent the arrangement of parts and the operation of this system. The pump is worked first by hand to produce pressure in the air-chamber. This chamber is connected to the steam-chest of the engine by means of a long pipe, part of which is coiled in a receptacle, through which exhaust-steam from the engine has access, and part in a furnace. The water is converted into steam (in practice it is best to flash highly heated water into steam), in its transit through this pipe, which is delivered to the chest of the engine at the pressure

FIG. 1.

produced by the pump. When the engine is started it imparts motion to the pump, and the preinduced pressure is maintained; thus it will be seen that the function of the generator is to create volume, not pressure. Should the engine be stopped, and the fire continue to burn, the water in the coil is forced back to the air-chamber, and the production of steam is thereby checked. The engine being again started, the pressure in the air-chamber again forces water through the heated coil, and the generation is then resumed.

A relief-valve at the right of the pump limits the pressure. This valve is in no sense a safety-valve; for even if it were fixed so as not to yield to pressure, no explosion could occur, the mechanism of the pump not being strong enough to produce a bursting pressure.

When the engine is running, neither smoke nor steam is seen to come from the blast-pipe; the products of combustion, and a portion of the steam, of course, issue, but they are invisible to the eye, and almost imperceptible to the sense of smell. When desirable, a tin tube [speaking tube that may be bought for 3 cents per foot] may be used to connect the blast-pipe with the chimney.

The exhaust-steam is used to heat the feed-water, and finally escapes into the draft-pipe, thus making an effective exhaust-blast. The drippings from the engine (oil or water) are received by the vase, thus protecting the floor

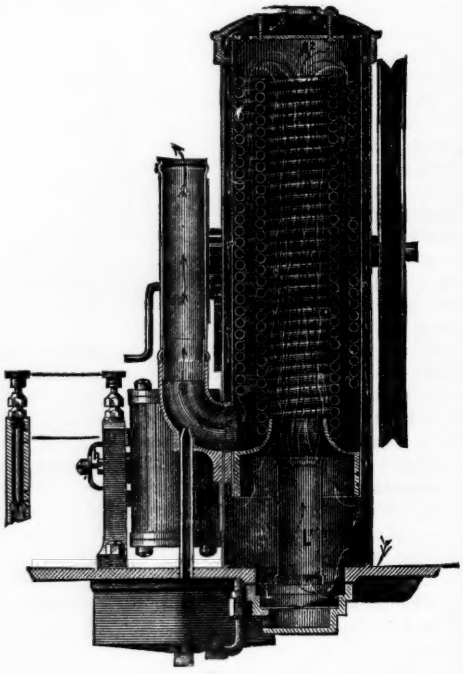


FIG. 2.

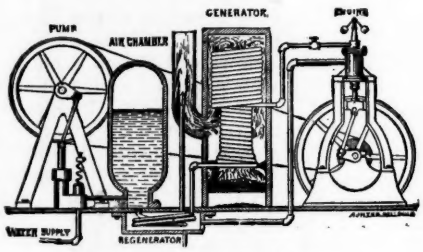
or carpet. The entire motor system is attached to the bed-plate, which may readily be detached from the vase which contains the water-supply. Where gas is not obtainable, the engine is adapted to be used with gasoline or naphtha.

The motor has sufficient power to drive a sewing-machine, lathe, small rotary fan for air-blast or ventilator, drug-mill, triturating machine, dental engine, filter-pump, or an air-compressor, such as needed in the atomizing of fluids for throat sprays. Indeed, its uses are very numerous; and when it is considered that it requires practically no attention, and cannot possibly explode, it must soon become a popular auxiliary to many mechanical operations. The address of the manufacturer is: Tyson Engine Co., 1301 Buttonwood street, Philadelphia, Pa.

### Bromide of Ethyl as an Anæsthetic.

CONSIDERABLE attention has been given of late, by surgeons, to the value of bromide of ethyl as an anæsthetic agent. Drs. Laurence Turnbull and R. J. Levis, of Philadelphia, have unquestionably had the greatest amount of experience with it in this country, thus far, but other surgeons are making use of it in what appear to be suitable cases. The late Dr. Thomas Nunneley, of Leeds, England, is credited with being, in 1849, the first experimenter who studied its effects. In 1865, he called the attention of the British Medical Association to its use as an anæsthetic in the Leeds General Eye and Ear Infirmary, but his remarks appear to have attracted so little attention that when, last year, Dr. Turnbull presented a paper on its use to the same Association the subject had been quite forgotten.

Since the commencement of the present year both Dr. Turnbull and Dr. Levis have published the results of their experience in Philadelphia and New York journals, and neither appears to entertain any considerable doubt of its superiority to chloroform or ether. The following are the expressions of Dr. Levis in regard to it :




System of the Tyson Vase Engine.

"Its principal physiological characteristics which will concern the surgeon, are its rapidity of action and the quickness of recovery from its effects.

"As far as observed by me, it does not influence the circulation, excepting to sometimes produce a slight increase in the rapidity of the heart's action and in arterial tension or pressure. The cerebral anæmia and the fatal syncope of cardiac depression, to which chloroform is liable, are dangers which do not appear to threaten in the anæsthesia of the bromide of ethyl.

"Respiration is but little influenced by the bromide of ethyl, as I have administered it, beyond the ordinary characteristics of all anæsthetic sleep; but in this respect its action seems more to resemble that of ether than that of chloroform. While making these assertions, I fully recognize the fact that the ultimate effects of all anæsthetics show that they are depressing agents.

"Nausea and vomiting appear to occur less frequently in the anæsthesia of the bromide of ethyl than in that of ether or of chloroform, and the rapidity of recovery from its effects must render such impressions very brief and transient.

"Commencing with the occasional and very cautious use of the agent, I have more recently adopted it to the exclusion of other anæsthetics, and am recording a series of detailed observations as to its effects.

"Bromide of ethyl, or hydrobromic ether, is a colorless liquid, with a specific gravity a little greater than that of water. It has a decided and characteristic odor, which is thought to resemble that of chloroform, but is less agreeable. It vaporizes more readily than chloroform, and in this respect and in density is intermediate between ether and chloroform. . . . The odor of the bromide of ethyl remains for a longer time on the breath of a patient than does that of ether or chloroform, but it seems to be quickly dissipated from the apartment in which it has been used. Its vapor is quite unirritating to the respiratory passages when inhaled, and in this quality has the advantage over both ether and chloroform.

"General excitement and the tendency to struggle occur far less frequently than in the early stages of the anæsthesia of ether, and, apparently, even in that of chloroform. It is evident that the impression on the motor centres must be very rapid, and I estimate that complete anæsthesia is accomplished in one-third less time than is the case with chloroform. The recovery from its effects is even comparatively more rapid, in the greater number of cases the time not exceeding two minutes after the inhalation has ceased. Muscular co-ordination is so quickly regained that the patient is often able at once to stand and to walk on awakening from profound anæsthesia. The pupils usually dilate as soon as complete anæsthesia is induced, and, as the sentient state returns, they resume their normal condition. I suggest that the condition of the pupils may be an index and guide in the administration.

"Anæsthesia with the bromide of ethyl is usually effected in from two to four minutes. The most rapid production of complete insensibility, in my experience, has been in one minute, in the case of a girl eight years old; the longest period has not in any case exceeded five minutes. When carefully administered, the quantity consumed has varied from one fluidrachm in the case of a child, iridectomy being performed, to eleven drachms used during an amputation of the forearm of an adult, occupying forty minutes, including the ligation of the vessels and the dressing of the stump.

"The quantity of the article consumed in effecting anæsthesia will greatly depend on the method and manner of using it. Much of it is, of course, wasted by diffusion in the atmosphere. With great regard for economy, this waste may

be prevented by imperviously covering the material on which it is poured. My own plan, with adults, is to pour two drachms of the bromide of ethyl on a small napkin folded up to a space of about four inches square, and then laid on a larger napkin, folded so as to be large enough to cover the entire face of the patient. It is well to secure the two napkins together with a pin.

"The vapor of the bromide of ethyl is not inflammable; indeed, when dense, it extinguishes a flame if brought into contact with it. In this respect it is free from the danger incident to ether when administered at night in proximity to lights, or when the actual cautery is used.

"The ordinary essentials of the proper and safe production of anæsthesia are required in the use of the bromide of ethyl. That these essential details are apt, through ignorance or carelessness, to be disregarded, every practical surgeon is aware, and the frequent difficulties and occasional calamities will attest.

"Whilst feeling inclined to impress caution in regard to the use of so powerful an agent as the bromide of ethyl, I am, from a basis of experience, inclined to recommend its use to the profession."

At a recent meeting of the New York Academy of Medicine, Dr. J. Marion Sims read a paper on the effects of bromide of ethyl in a case where he had performed Battey's operation for removal of the ovaries. The patient was under its influence more or less completely for an hour and a half, and subsequently died with symptoms which Dr. Squibb thought to resemble more nearly those of acute bromine poisoning than the ordinary effects of an anæsthetic. For some time after the autopsy which was made, was the odor of the bromide of ethyl perceptible in portions of the viscera removed. In none of the cases in which it was employed by Drs. Levis or Turnbull had it been administered for so long a period, forty minutes having been the longest, and the general impression which appeared to prevail among the gentlemen who took part in the discussion of the paper was, that the anæsthetic is better adapted for short than for long operations. Dr. Sims referred to various preparations of the ethyl bromide now in the market, and expressed his preference for that of the Wyeth Brothers, of Philadelphia, owing to the absence of unpleasant odor.

A number of surgeons in this city are now engaged in studying the anæsthetic effects of the agent, and it is not unlikely that further results will be reported before long. The cost of Wyeth's preparation is, we believe, about $4.00 per lb., sulphuric ether is about $0.72 to $0.90 per lb.. and bi-chloride of methylene (used only to any extent by Mr. Spencer Wells, of London, but by him indorsed in a very unqualified manner), costs about $0.75 per ounce.

### The Story of the Cinchona Calisaya Ledgeriana.

THE following history is given in a Dutch journal, called the *News of the Day*,* by K. W Van Gorkom :—

Until a few years ago cinchona bark with a proportion of 5 per cent of quinine was as rich as could be had. There was, however, a probability that there were in South America richer kinds than ever reached the European markets.

Between the years 1841–58 an Englishman, named Ledger, travelled over South America, commissioned by the Australian Government to buy alpacas. Among his attendants he had a faithful old servant named Manuel, formerly a Cascarillero, and well acquainted with many of the cultivators of the cinchona trees. Manuel explained to Ledger how difficult it was to obtain seeds of the best species, as both the authorities and the peasantry were very distrustful of foreigners, and they would use every means to mislead collectors—would change good seeds for bad ones, or would destroy the germs before supplying the seeds. He (Manuel), however, offered to obtain for his master, out of affection, a selection of seeds of the finest cinchonas.

Ledger had not found much success in the acclimatization of the alpaca in Australia, and in 1865 he returned to Peru. There he met his old servant Manuel, who gave him a packet of cinchona seeds, which he had collected in the Bolivian province of Caupolica. Ledger sent this packet from Arica in July, 1865, to his brother in England, who addressed himself to the English Government. But now arose a difficulty. Sir William Hooker was dead; his successor, J. D. Hooker, was absent through illness; and Markham, the famous traveller, who had first brought the cinchona trees from South America for the English Government, had lately departed for India. Fearing that the seeds might die, and all the trouble and expense involved in their collection be lost, a portion of the precious consignment was intrusted to the Dutch Government. On the advice of the late Professor Miguel the seeds thus offered were accepted, and the sum of 100 gulden was paid for them, on the condition that a small further premium should be paid if the seeds should prove to be living and the plants should turn out to be of a good sort. At the end of 1865 the seeds were in the hands of the chief of the Java cinchona plantations, and a year later a report was sent by him saying that 20,000 plants had been raised. The Dutch Government thereupon paid a further sum of 500 gulden, with which Ledger was fully satisfied.

The other half of the seeds sent by Ledger were purchased by a Mr. Money, and experiments made with them in British Indian plantations, but without bringing any noteworthy results.

* *Het Nieuws van den Dag*. Ed. by G. L. Funke and P. Van Santen, Amsterdam, 12 fr.—ED. N. R.

During the months of November and December, 1866, about 5 or 6 hectares of land were planted out with the young cinchona plants raised from Ledger's seeds. In 1868 a disease broke out which caused much damage. Subsequently it was shown that this disease was occasioned by a small insect known as *Helopeltis Antonii*, the same insect as the one which attacks the tea-plant. It has been found impossible altogether to preserve the plants from the attacks of this insect, but its ravages have been checked to a great extent by watching with great care the young plants, cutting off those twigs which are affected. When the tree reaches a certain size and age it is not liable to much damage from this cause.

The little plants of 1866 had become in 1872 so far advanced that specimens of their bark could be submitted to chemical analysis. Up to this time nothing indicated that the trees were different from the ordinary cinchona calisaya. They had not yet bloomed, but a slight diversity was to be observed both in the shape and color of the leaves. The first specimen tested, however, indicated a greater percentage of quinine than had ever yet been obtained. At first it was supposed that this might be accidental; but further investigation proved that the first was a normal and not an accidental sample, and on May 27th, 1873, the first supply of the new cinchona was sold at Amsterdam at 4.62 fl. per lb., or double the price of the best South American bark.

Meanwhile some of the trees had begun to bloom, and it became evident that a distinct type of cinchona had been brought, which was now distinguished as Ledgeriana. Great care was taken to pick out the best plants for propagation, and the seeds of these were carefully preserved.

Of the 20,000 plants at first raised 8,000 died. The plantation of those that remained was thinned out every year, but always leaving stumps of the old trees, which will be fit for harvest in another eight years. By this means, up to 1877 inclusive, 9,200 kilograms of this bark had been collected, which realized, at Amsterdam, 89,953.32 fl. The 1878 harvest reached 4,200 kilograms, the value of which may be estimated at, at least, 30,000 gulden.

Millions of seeds have since been sown, both within and outside of the island.

In the Government plantations there are now, besides 6,300 mother-trees, 211,000 plants raised from seeds and 36,000 from cuttings, while in the propagation beds there are other 6,000 cuttings and 254,000 seedlings.

A cinchona speculation in Java is now quite a gold mine, if managed with the requisite skill and care. In most parts of the island a hectare of ground can be brought into condition for cinchona-growing for about 200 gulden, while the annual cost for maintaining it would not be more than 40 gulden. The expenses of gathering, packing, and freight to Europe would not average more than a gulden per kilogram.—*The Chemist and Druggist.*

### Euphorbium as a Protective of Iron and Steel.

SOME years ago, at Natal, some of the laborers belonging to the colonial government, during the progress of their work, remarked that certain plants belonging to the natural order Euphorbiaceæ, when cut with an iron or steel tool, left a very adhesive coating of gum on the metal, and very difficult of removal. And they also discovered that a metallic surface covered with this material was no longer subject to rust. This observation led to experiments to ascertain whether gum euphorbium could not be utilized in a practical way for the preservation of metals generally. Plates of iron were, therefore, coated with the substance and immersed in the waters of Southern Africa, which are well known for their deleterious action and for the rapidity with which vegetation develops in them. Euphorbia grows at Natal, very near the coast, so that nothing was more convenient and easier to ascertain than the fact as to whether the gum from the plant possessed the qualities attributed to it: whether it really would prevent iron from being corroded by sea-water and attacked by vegetation. These experiments having proved a success, an effort was made to ascertain whether a practical application could be made of the discovery. With this object, gum euphorbium was dissolved in alcohol, and it was found that in this way an easy means was obtained for coating the hulls of ships, and the surfaces of all metals needing this mode of preservation. The alcohol on evaporation leaves the surface coated with a clean, hard coating of the gum. The first experiments were pursued yet further; plates of iron coated with the gum were sunk in the waters at the Chatham docks, where everything quickly corrodes or decays. At the end of a couple of years it was found, on examination, that the iron was perfectly clean and had undergone no corrosion whatever. In Africa the same substance has been experimented with successfully as a preventive of the attacks of white ants. Success in this case is attributed to the bitterness of the gum, which prevents the insects from perforating substances coated with it. It is said that this new preservative is now being introduced into England. In addition to the other properties attributed to it, it may be stated that it gives quite a lustre to objects covered with it, and also preserves them against the action of the atmosphere.—*Scient. Amer. Suppl.*

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**Glass Weights.**—Accurate glass weights are now manufactured in Leipzig. They are said to be hardly, if at all, inferior to weights made of rock-crystal.

## RECENT PAPERS.

**Formation of Resins and Chemistry of Essential Oils.**—(Prof. G. Dragendorff.) Of the two theories which have been proposed to explain the formation of resins, the author considers that the oxidation theory is the correct one. It was found that the oil of *Pinus Pumilio* Hänke, when kept for a year in a flask, deposited a crystalline resin having the composition $C_{20}H_{30}O_2$; it is hence inferred that all resins are produced by the oxidation of hydrocarbons. The presence of water does not appear to aid the formation of the resin. Certain oils, after they have been kept for some time, will no longer mix to a clear solution with excess of alcohol, although a small quantity of alcohol produces no turbidity. This turbidity is due to the precipitation of the resin which was dissolved in the oil.

This theory is opposed to experiments made by Godefroy and Liebermann (*Zeitschr. Oest. Apoth. V.*, 15, 583), in which they found that oil freshly prepared from green juniper berries became turbid on addition of alcohol. The author, however, found that oil of ripe juniper berrjes, prepared by himself, did not become turbid; he can, therefore, account for the results of Godeffroy only by the supposition that the oil from green junipers oxidizes more rapidly than that prepared from the ripe berries.—*Arch. de Pharm.* and *Journ. Chem. Soc.*

trated to the consistence of honey, and mucilage and salts having been separated, as much as possible, by precipitation with alcohol, the resulting solution was deprived of alcohol by distillation, and the residue shaken with ether, which left, on evaporation, a crystalline substance. This was purified by repeated crystallizations from hot water, and afterwards alcohol and ether. When perfectly pure, it had all the properties and reactions of salicylic acid, and was proved to be this substance by proximate analysis. Another substance, so far separated by Mr. Mandelin, is tartrate of magnesium.

Salicylic acid, as such, has so far been extracted only very rarely from plants. It occurs, however, more frequently in form of some of its derivatives, for instance the methyl-salicylic acid. The only known instance in which salicylic acid appears to have been extracted from a plant (the flowers of *Spiræa Ulmaria* L.) is slightly doubtful, for this reason that the existence of the acid, as such, in the plant, was not absolutely proved; and hence, that it might have been formed, by oxidation, from salicylous acid during the process of extraction. In *Viola tricolor*, however, it may be assumed that salicylic acid, as such, is present, which acts as an antiseptic, and is one of the causes that the plant may be preserved over the winter without difficulty.—*Abstract received from Prof. G. Dragendorff.*

**Artificial Fruit Essences.**—The following table shows the number of parts of each ingredient to be added to 100 parts of alcohol. All the ingredients as well as the alcohol must be perfectly pure:

| | Peach. | Apricot. | Plum. | Cherry. | Black Cherry. | Lemon. | Pear. | Orange. | Apple. | Grape. | Gooseberry. | Raspberry. | Strawberry. | Melon. | Pineapple. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Glycerin | 5 | 4 | 8 | 3 | .. | 5 | 10 | 10 | 4 | 10 | .. | 4 | 2 | 3 | 3 |
| Chloroform | .. | 1 | .. | .. | .. | 1 | .. | 2 | 1 | 2 | .. | .. | .. | .. | 1 |
| Nitrous ether | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | .. | 1 | 1 | .. | .. |
| Aldehyde | 2 | .. | 5 | .. | .. | 2 | .. | 2 | 2 | 2 | 1 | 1 | .. | 2 | 1 |
| Acetate of ethyl | 5 | .. | 5 | 5 | 10 | 10 | 5 | 5 | 1 | .. | 5 | 5 | 5 | .. | .. |
| Formate of ethyl | 5 | .. | 1 | .. | .. | .. | .. | 1 | .. | 2 | .. | 1 | 1 | 1 | .. |
| Butyrate of ethyl | 5 | 10 | 2 | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | 5 | 4 | 5 |
| Valerianate of ethyl | 5 | 5 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 5 | .. |
| Benzoate of ethyl | .. | .. | .. | 5 | 5 | .. | .. | 1 | .. | .. | 1 | 1 | .. | .. | .. |
| Œnanthate of ethyl | 5 | 1 | 4 | 1 | 2 | .. | .. | .. | .. | 10 | 1 | 1 | .. | .. | .. |
| Salicylate of methyl | 2 | 2 | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | 1 | 1 | .. | .. |
| Sebacic acid | 1 | .. | .. | .. | .. | .. | 10 | .. | .. | .. | .. | 1 | .. | 10 | .. |
| Acetate of amyl | .. | .. | .. | .. | .. | .. | .. | 10 | .. | .. | .. | 1 | 3 | .. | 10 |
| Butyrate of amyl | .. | 1 | .. | .. | .. | 10 | .. | .. | 10 | .. | .. | .. | 2 | .. | .. |
| Valerianate of amyl | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Essence of orange | .. | .. | .. | .. | .. | 10 | .. | 10 | .. | .. | 5 | 5 | .. | .. | .. |
| Alcohol. solutions saturated in the cold of: Tartaric acid | .. | .. | .. | .. | 1 | .. | .. | 1 | 1 | 5 | .. | .. | .. | .. | .. |
| Oxalic acid | .. | 1 | .. | .. | .. | 1, | .. | .. | .. | .. | 1 | 1 | .. | .. | .. |
| Succinic acid | .. | .. | .. | 1 | 2 | . | .. | .. | .. | 3 | 1 | .. | .. | .. | .. |
| Benzoic acid | .. | .. | .. | .. | .. | . | .. | .. | .. | .. | .. | 1 | .. | .. | .. |

—After *Dingler's Pol. Journal.*

**To Detect Nitric, in Presence of Nitrous Acid.**—(A. Piccini.) This method is useful for detecting minute quantities of nitrates in the presence of large quantities of nitrites, and is founded on the property urea has of decomposing the latter in acid solution. Urea is added to the solution containing the nitrate, and this is then gradually added to another solution of urea in dilute sulphuric acid. As soon as the evolution of nitrogen due to the decomposition of nitrites has ceased, some iodized starch is added, and then a fragment of zinc, when a blue coloration is produced if any nitrate is present.—*Gaz. Chim. Ital.* in *Journ. Chem. Soc.*

**Viola Tricolor; its Constituents.**—Mr. Mandelin has begun a chemical analysis of *Viola tricolor*, of which some preliminary results have been communicated by Prof. George Dragendorff, of Dorpat.

The aqueous extracts of the plant having been concen-

**South American Saltpetre.**—(G. Langbein.) The author explains the formation of Peruvian saltpetre by the assumption that the nitrogen of rotting sea-weeds eliminated as ammonia was oxidized by the air into nitric acid, and that this, combined with the bases present in the sea-water, was concentrated by spontaneous evaporation. The following is an analysis of the water used in Peruvian saltpetre works for feeding boilers, from which it will be seen that the water represents one of the worst kinds employed for such purposes:

| | | |
|---|---|---|
| Residue per litre in grams | 5.8400 | 5.8600 |
| $Ca\,So_4$ | 2.0606 | 1.9244 |
| $Na_2\,So_4$ | 1.4731 | 1.5620 |
| $Mg\,Cl_2$ | 0.2256 | 0.2269 |
| $Na\,Cl$ | 2.0511 | 2.1332 |

This water is now purified by adding sodium carbonate to it in quantity equivalent to the lime and magnesia

present, and agitating the mixture by means of a Körting's elevator. The magnesium carbonate is then decomposed with milk of lime, and the mixture allowed to settle. With regard to the manufacture of saltpetre, various improvements have recently been made in boiling out the raw material. Instead of using direct steam, condensers are employed. These form closed square cylinders 12 m. × 1.85 m. × 1.85 m., into which the raw material is brought on perforated trucks which run on rails. The trucks and contents remain in the cylinders during the boiling out, and contain at the end of the operation the insoluble residue. The condensers are worked at a pressure of 4 to 5 atmospheres, agitation being procured by elevators.

In conclusion, analyses of the Peruvian raw material from various deposits are given. The most important deposits are those situated between Taltal and Paposa:—

$Na\,No_3$. $Na\,Cl$ $Na_2\,SO_4 + H_2O$. $Ca\,Co_3$ and insoluble.

47.2 7.4 26.7 18.7

The saltpetre deposits in Chili are almost unlimited in surface area, but the layer which yields saltpetre (caliche) is less extensive, its thickness being between 30 and 40 cm.—*Dingler's Pol. J.*, 232, 453.

**Alcoholometric Tables.**—S. Cohne, of London, publishes the following letter in the *Chemical News* (London): It would be a great desideratum to have a table showing the comparative strength of alcohol as indicated by '*proof*' as practised in England, and *percentage by volume* according to Tralles and Gay-Lussac's tables, as in use on the Continent. It is strange that neither in Ure, Watt's, or Muspratt's are any such tables to be found. As a full table would occupy too much space, I give merely the formula by which any given strength in proof-spirit may be calculated in percentage by volume or vice versa.

Proof-spirit as accepted by the English Custom House has a specific gravity of 0.9186, at 60° F., and contains 57.27 per cent by volume.

Abbreviations. { O=overproof. T=(Tralles) percentage. U=underproof.

*Formula* 1.—To change Overproof into Percentage.

$$T = O \times 0.5727 + 57.27.$$

Example.—How much is 66.1 Overproof in Percentage?

$$T = 66.1 \times 0.5727 + 57.27 = 95.12.$$

On reference to the ordinary tables it will be seen that 66.1 overproof=0.8156 sp. gr., and that 95.12 per cent=0.8157 sp. gr.

*Formula* 2.—To change Percentage into Overproof.

$$O = \frac{T - 57.27}{0.5727}$$

Example.—95.12 per cent. How much Overproof?

$$O = \frac{95.12 - 57.27}{0.5727} = 66.1$$

*Formula* 3.—To change Underproof into Percentage.

$$T = 57.27 - (U \times 0.5727).$$

Example.—20 Underproof to change into Tralles.

$$T = 57.27 - (20 \times 0.5727) = 45.55.$$

*Formula* 4.—To change Percentage into Underproof.

$$U = \frac{57.27 - T}{0.5727}$$

Example.—45.55 Tralles to change into Underproof.

$$U = \frac{57.27 - 45.55}{0.5727} = 20$$

In a subsequent number of the same journal, Mr. Alfred H. Allen draws attention to the fact that the spec. grav. of proof-spirits is 0.9198, instead of 0.9186, as Mr. Cohné had assumed; and that, consequently, the true percentage of alcohol in proof-spirit is 57.06 instead of 57.27. He also gives the following rules:

1. The percentage by volume of absolute alcohol is obtained by multiplying the percentage of proof-spirit by the factor 0.5706.

2. The percentage by volume of absolute alcohol is also obtained by multiplying the percentage of alcohol by weight, by the observed specific gravity, and dividing the product by 0.7938.

3. The percentage by volume of proof-spirit is obtained by dividing the percentage of alcohol by volume by 0.0706.

4. The percentage by volume of proof-spirit is also obtained by multiplying the percentage of alcohol by weight by the specific gravity.

If we express the percentage of alcohol by weight as W, the density by D, the percentage of alcohol by volume as V, and the percentage of proof-spirit as P, the above rules can be expressed by the following formulæ:

1. $V = P \times 0.5706$.
2. $V = \frac{WD}{0.7938}$
3. $P = \frac{V}{0.5706}$ or $= V \times 1.7525$.
4. $P = WD \times 2.208$.

**Belladonnine.**—According to K. Kraut, the commercial alkaloid *belladonnia*, which has heretofore been considered as the concomitant of atropia in belladonna, consists of atropia and another base, not decomposable by baryta water. The author restricts the name belladonnia or belladonnine to the latter. The investigations of Ladenburg (see this number, page 138 sq.) raise the question whether belladonnia and hyoscyamia are not one and the same alkaloid.—*Ber. d. Deutsch. Chem. Ges.*, 1880, 165.

**Protection of Surgical Instruments from Rust.**—The *Medical Times* quotes from the *Indian Medical Gazette* some correspondence which has passed between the Home and Indian Governments on this subject. Rangoon oil, which was strongly advised in India, has proved a failure. Tincture of benzoin, which is so commonly used in hospitals and dispensaries, is not even alluded to—probably from expense and instability. Boiled Lucca and linseed oils, with the addition of acetate of lead or lead filings, are more or less successful, but have no distinct advantage. It is rather disconcerting to learn that, after all the inquiry and science, strained mutton fat is most to be trusted. It would have been satisfactory to learn that science could protect the metal from future oxidation during manufacture. What has become of that discovery, now nearly three years old, by which steel was to be protected from any possible rust by having its surface not coated, but chemically altered by exposure to super-heated (1,200°) steam? For the present all cutting instruments are to have a coating of mutton fat, and blunt ones are to be nickel-plated. Cases are no longer to have velvet linings.—*Chem. and Drugg.*

[In the U. S. Navy, mercurial ointment is used as a protection for surgeon's instruments. Surgical instrument makers in this city use paraffin, and one, at least, of the sewing machine manufacturers finds vaseline or cosmoline the very best protection against rust for bright work that is stored in lofts until wanted.—Ed. N. R.]

**Effects of Tobacco upon the Eyesight, etc.**—(E. T. Ely.) In the *N. Y. Med. Journ.*, of April, this writer publishes the results of his examination of over one hundred persons, chiefly cigar makers, with reference to the condition of their eyesight and the influence which the use of tobacco and exposure to its effects incident to their occupations had upon their health.

The method followed was to test the vision of each person, then to examine the eyes externally and with the ophthalmoscope, then to ask a few general questions about the health, habits, etc. As a result of this study and the experience of others, Dr. Ely's own impressions are "that tobacco has of itself only a comparatively slight influence in impairing the vision; that working in tobacco is as healthful as most other sedentary occupations: that in certain persons peculiarly susceptible to it, or, when combined with other noxious influences, it may impair the vision or the general health, just as has been claimed for it, and that constant contact with it, as with other poisons, may beget a tolerence of it sufficient to contradict all theory.

The strength of the weed and the manner of using it have an influence, and this may explain the freedom from tobacco amblyopia which certain countries are said to enjoy.

**Oxalate of Cerium in Vomiting of Pregnancy.**—DR. HICKMAN claims that for this purpose the remedy should be given much more freely than is customary—ten grains as often as necessary, taking care to give the first dose half an hour before the patient rises from bed. He has not seen good results follow a combination of it with bismuth.—*Med. and Surg. Rep.*

**Chloral as Antidote for Strychnia, etc.**—According to Prof. Theodor Husemann, chloral is a powerful antidote for strychnia, brucia and thebaïa, having preserved life even in cases where quantities amounting to six times the fatal dose of these poisons had been taken. The quantity of chloral to be administered at a time should not be less than 2 gm. (31 grains) and not over 3 gm. (46 grs.)

**Oil of Birch and Russia Leather.**—According to a communication in the *Journal für angewandte Chemie*, American leather manufacturers bought, after the Centennial exhibition, no less than 200,000 pud * of Russian oil of birch, as it was asserted that the fine odor of Russia leather was entirely owing to the latter. While it is true that birch-bark and the empyreumatic oil of birch are used in the preparation of this leather, yet the peculiar odor of Russia leather is not entirely owing to it, but rather to the original hides themselves; for the hides of Russian cattle, in the districts from which the tanneries are supplied, already possess this peculiar flavor.—*Industrieblätter.*

**Preparation of Basic Bismuth-Salts free from Arsenic.**—(R. SCHNEIDER.) It is known that many sorts of commercial bismuth contain arsenic up to 0.5%, and even more. On dissolving such arsenical bismuth in cold nitric acid of spec. gr. 1.200, a clear solution is obtained. But if the bismuth be introduced into nitric acid (1.200), previously *heated*, and the heat be continued during solution, the liquid soon begins to become turbid and separates a dense white powder, which is not soluble in a small quantity of nitric acid and concentrated solution of bismuth nitrate, and consists of bismuth arseniate. The explanation is simple. Cold nitric acid converts the arsenic into arsenious acid, and arsenite of bismuth being easily soluble in nitric acid, it is retained in solution. On heating the acid, however, the arsenic is further oxidized, and a difficultly soluble arseniate is formed.

To produce a subnitrate of bismuth free from arsenic, the author recommends the following process: 2 kilos of coarsely powdered bismuth are introduced, without interruption, but in small portions at a time, into 10 kilos of nitric acid, spec. gr. 1.200, previously heated to 75–90° C. There will be a very brisk reaction and evolution of vapors. Towards the end of the process, when the nitric acid becomes weak, the reaction is assisted by an increased heat. As soon as over one-third of the bismuth has been introduced, a cloudiness makes its appearance, which gradually increases in proportion as the bismuth solution becomes more concentrated and the free acid diminishes. When all the bismuth is in solution, the liquid is heated to boiling, and set aside for a few days. The clear liquid may then be poured off from the dense white precipitate, or it may be filtered (through asbestos washed with hot nitric acid) and at once evaporated to the point of crystallization without previous dilution with water! The liquid, which is thus evaporated, still contains arsenic, because, during the latter part of the operation, the arsenic is no longer converted into the higher oxide-acid. The crystals obtained on evaporation, after being collected on a filter and thoroughly washed with diluted nitric acid, are entirely free from arsenic, and may be used for the preparation of pure basic bismuth salts, in the usual manner.—*Journ. f. prakt. Chem.* and *Pharm. Z. f. Russl.*

**Melaleuca Paraguariensis Bonpl.**—The French Academy of Medicine has obtained from the descendants of the celebrated traveller and botanist Aimé Bonpland a manuscript which the latter wrote on a medicinal plant extensively and successfully used by him during his well-known involuntary sojourn in Paraguay for rheumatism and other diseases, even for cholera and yellow fever. This manuscript is now published for the first time in the *Journal de Thérapeutique* (p. 36). Though the medicinal observations of the celebrated savant may perhaps appear to some as somewhat antiquated, still his statements carry a good deal of authority with them. The tree which Bonpland mentions is the *Melaleuca paraguariensis* (Bonpl.), discovered by him on the Rio Corrientes at the borders of Paraguay and the Brazilian province of Matto Grosso. He describes is as attaining a height of 4–5 metres, and to agree in its botanical characters with the Melaleuca of the Moluccas. Whether it be really the *Melaleuca Cajuputi*, or another species, which possibly was transplanted from Eastern Asia to Paraguay during the supremacy of the Jesuits, cannot now be decided; yet the circumstance that a colorless essential oil prepared from it by Bonpland had a "peculiar" odor, makes it improbable that it is the true cajuput. No doubt, the eulogies bestowed upon oil of cajuput, as a remedy for neuralgia and cholera, in the beginning of this century, induced Bonpland to experiment with it.—*Pharm. Zeit.*

**Dr. August Koenig's Family Medicines.**—According to the *Pharmaceutische Centralhalle*, the composition of these nostrums, for which the firm of A. Vogeler & Co., in Baltimore, claim to have "the sole depot in America" is as follows:

1. Hamburg Tea (Hamburger Brustthee), a mixture of althæa and licorice root, red poppy petals, common mallow flowers, marsh mallow leaves, and the flowers (dyed a saffron color) of a stellaria, besides some coarsely powdered rock-candy, and some oil of anise and fennel.

2. Hamburg drops (Hamburger Tropfen) resemble the compound tincture of aloes of the Germ. Ph. (Swedish bitters), but contain somewhat more agaric and are made more viscid by juniper juice.

3. St. Jacob's oil (St. Jacobsöl) is a good quality of oil of turpentine, mixed with a little oil of rosemary and lavender, and colored faintly red with alkanet or saunders.

**Cause of the Reddening of Carbolic Acid.** DR. HERMANN HAGER finds that the cause (or one of the causes) of the reddening of carbolic acid is access of air containing ammonia, or ammonium nitrite. Colorless crystals if kept in tightly closed (*not* glass stoppered bottles, remained unaltered, but if loosely stoppered and purposely exposed to an atmosphere containing ammonia, reddened or rather were surrounded by a red liquid, in about two weeks. Ammonium nitrite brought about the latter phenomenon in three days.—*Pharm. Centralhalle*, 1880, 77.

**Pyroxylin; its Composition.**—(JOSEF MARIA EDER.) The author first gives a list of the different formulæ assigned to pyroxylin whether soluble in ether-alcohol, glacial acetic acid, etc., or not—and points out that the statements of the different observers are so contradictory, as to be irreconcilable. A great many text-books, or books of reference, divide pyroxylin into trinitrocellulose ($C_6H_7O_8(NO_3)_3$), or gun-cotton proper (as an explosive), and dinitrocellulose ($C_6H_8O_8(NO_2)_2$) or collodion cotton; but this division is without any foundation in fact. The author maintains the view that pyroxylin is *not* a nitro-compound, but a derivative of nitric acid, containing the group $NO_2$. The different pyroxylins obtained by the author are the following:

| | |
|---|---|
| Cellulose-hexanitrate | $C_{12}H_{14}O_4(NO_3)_6$ |
| " -pentanitrate | $C_{12}H_{15}O_5(NO_3)_5$ |
| " -tetranitrate | $C_{12}H_{16}O_6(NO_3)_4$ |
| " -trinitrate | $C_{12}H_{17}O_7(NO_3)_3$ |
| " -dinitrate | $C_{12}H_{18}O_8(NO_3)_2$ |

All of these compounds are decomposed by alkalies, with the elimination of nitrates. The simultaneous production of nitrites is no proof of the existence of the nitro-group $NO_2$. They yield, even in the cold, nearly all their nitrogen in form of nitrates (free from nitrogen

* 1 pud=36.105 avoid. pound.

tetroxide), when treated with sulphuric acid. Towards ferrous sulphate and chloride they behave exactly like other nitrates. On decomposing pyroxylin with sulphuric acid over mercury, it yields, like any other nitrate, all its nitrogen, in form of nitric oxide. Reducing agents convert pyroxylin into ordinary cotton. Hence all pyroxylins are constructed after the formula:

$$C_{12}H_{20-n}O_{10-n}(O.NO_2)_n.$$

The first of the above named compounds, the cellulose-hexanitrate, is insoluble in ether-alcohol, and constitutes *gun-cotton* properly so called; the other five pyroxylins are all soluble in ether-alcohol, and constitute *collodion-cotton*. A mononitrate could not be prepared by the author, although he varied the proportions in all possible ways.

*Preparation of the various kinds of Pyroxlyin:*

1. *Gun-cotton proper*, or cellulose hexanitrate: Cotton, dried at 100 C°., is, after cooling, introduced into a mixture, cooled to about 10° C., of 3 volumes concentrated sulphuric acid, spec. gr. 1.845, and 1 volume nitric acid, spec. gr. 1.500. No more cotton must be introduced than can be easily and completely immersed. Under frequent stirring and kneading the cotton is left to macerate for 24 hours. It is then taken out, pressed, thrown in much water, washed by squeezing until it ceases to feel hot, then washed for several days in often renewed water, and finally in hot water.

100 parts of cotton yield 175 to 180 parts of gun-cotton.

This pyroxylin contains a small amount of a lower grade, which is soluble in ether-alcohol, and may be extracted by the latter.

2. *Collodion-cotton.* It is not possible to *exactly* predict the kind of pyroxylin obtained from an operation; yet by carefully observing the strength and proportion of the acids, very close results may be obtained. If the acids are as concentrated as possible, the hexanitrate (gun-cotton proper) is mostly produced; if the acids were too dilute, some tetranitrate is present, and the whole product is soluble in ether-alcohol.

The *pentanitrate*, however, may be prepared almost entirely pure by dissolving pyroxylin in warm nitric acid, and precipitating the clear solution by an excess of sulphuric acid. The best way is to introduce the pyroxylin into nitric acid, spec. gr. 1.400, at a temperature of 40–60° C., until the solution acquires a strongly yellow color. The turbid solution is then allowed to cool, and this is promoted by ice, to prevent the generation of red vapors, which, once begun, would destroy the product. The solution, after being filtered through asbestos, is precipitated by 4 times its volume of sulphuric acid, spec. gr. 1.840.

The *tetranitrate* and *trinitrate*, which are the most soluble forms of collodion cotton, are generally produced together, if the acids were not too concentrated, and were sufficiently warm. A product consisting mostly of the *tetranitrate* is produced by treating cotton with a mixture of 1 vol. of sulphuric acid, spec. gr. 1.845, and 1 vol. nitric acid, spec. gr. 1.380 at 65° C., for 15 minutes. A trifle less nitrogen is contained in the product obtained by treating cotton with equal volumes of sulphuric (1.845) and nitric (1.400) acids, at 80° C. for 15 minutes. Schering's collodion-cotton has the composition of the tetranitrate.—*Ber. d. Deutsch. Chem. Ges.*

**Petroleum in Colorado.**—The Pueblo *Chieftain* says: A visit to the works of the Pioneer Oil Company, in South Pueblo, disclosed the fact that the company has its drill down something over 700 feet. The superintendent says that the drill is now over 1,200 feet below the coal measures, and every indication was as the most sanguine of the company expected. He thinks they will have to go 1,300 feet, or perhaps more, before they strike a flowing supply. The company has ample capital, and will go 2,000 feet, if necessary, to strike it. The formation gone through so far is almost identical with the formation of the Pennsylvania oil regions.

## BIBLIOGRAPHY.

LEHRBUCH DER PHARMACEUTISCHEN CHEMIE. Von DR. HUGO SCHWANERT, ordentlichem Professor der Chemie an der Universität zu Greifswald. In drei Bänden; mit zahlreichen Holzschnitt-Illustrationen. Erster Band. Mit 146 Holzschnitt-Illustrationen und einer Spectraltafel. Braunschweig: C. A. Schwetschke und Sohn. (M. Bruhn). 1880. 8vo, XI., 756 pp.

(*Treatise on Pharmaceutical Chemistry, by Dr. Hugo Schwanert. In 3 volumes with numerous woodcuts. Volume I: with 146 woodcuts and a spectrum table, etc.*)

THE past year or two have enriched pharmaceutical literature with a number of important publication on the field of pharmacognosy, practical pharmacy, and chemistry. Among the publications relating to the latter, the work above quoted deserves to occupy a prominent rank, both by the clearness and accuracy of its explanations of chemical facts, and by the fulness with which the different subjects are treated. The author, who is thoroughly conversant with the wants and requirements of pharmaceutical studies, started from the idea that a knowledge of the more important physical laws, of the principal physical and chemical properties of bodies, as well as the fundamental laws of chemistry is absolutely necessary for a proper understanding of the chemical processes occurring in pharmacy; and still further, that a full and clear conception of the constitution, formation, and decomposition of pharmaceutical chemicals cannot be acquired without at the same time studying other compounds which may not be employed in pharmacy. In other words, in the opinion of the author, pharmaceutical chemistry should be taught in a systematic manner, beginning with physics and passing successively to chemical physics, chemical philosophy, and chemistry, in which only such substances and compounds may be passed over as are only of importance in a theoretic sense.

In following this plan, the author treats, in the beginning, of the general physical properties of bodies, form (including crystallography), expansion and contraction, latent and specific heat, absolute and specific weight or gravity, behavior of bodies towards light, electricity, and galvanism. He then passes on to the chemical properties of bodies, and finally takes up the chemistry of the elementary bodies, beginning with hydrogen, and including the following: Electro-negative elements; non-metals: chlorine, iodine, bromine, fluorine, oxygen, sulphur, selenium, tellurium, nitrogen, phosphorus, arsenic, antimony, boron, silicium, and carbon. The latter substance and various of its compounds (such as cyanogen, sulphide of carbon, etc.) are placed here for the reason that many of these compounds occur in salts which are more conveniently discussed in connection with the salts of inorganic acids.

The text of the work is evidently written with great care, being clear, lucid, and free from verbosity. So far as we have examined the work, we have not met with any statements to which we could take positive exceptions, although we differ from the author in his views here and there on subjects which bear argument. Altogether we consider it a work highly creditable to the author, and hope to find the succeeding volumes as satisfactory as the first.

THE HYPODERMIC INJECTION OF MORPHIA. Its History, Advantages, and Dangers. Based on the Experience of 360 Physicians. By H. H. KANE, M.D. New York: Chas. L. Bermingham & Co. 1880, 8vo, pp. 554. $2.50.

THIS work is a compilation of answers to a series of questions proposed by the author, rather than a comprehensive summary of the subject; and although it evinces a commendable amount of industry on the part of the compiler, we fail to see in it so clear an enunciation of principles as should have resulted from a study of the materials of which he was possessed. Taking his own summary of

of the work, he establishes nothing that has not already been generally conceded with respect to the effects of morphia when used hypodermatically (which seems to be the proper term), as compared with other methods for its administration. We have no doubt that many of the accidents that follow hypodermic medication are to be traced to improper modes of performing the operation and improper character of the solutions used, and we believe, also, that this is a subject upon which physicians generally will bear instruction. The present treatise does not, however, seem to us as clear upon these points as we could desire, although more complete than any other with which we are acquainted.

CLINICAL LECTURES ON THE DISEASES OF WOMEN, Delivered in Saint Bartholomews Hospital. By J. MATTHEWS DUNCAN, M.D., LL.D., F.R.S.E., etc. Philadelphia: Henry C. Lea, 1880. 8vo, pp. 175.

THESE lectures relate to Missed Abortion, Abnormal Pelvis, Chronic Catarrh of the Cervix Uteri, Ovaritis, Perimetritis and Parametritis, Painful Sitting, Aching Kidney, Pyonephrosis, Stricture of Urethra, Irritable Bladder, Vaginismus, Spasmodic Dysmenorrhœa, Hepatic Disease in Gynæcology and Obstetrics, Fibrous Tumors of the Uterus, Cancer of the Body of the Uterus, Uterine Hæmotocele, Parovarian Dropsy, Rupture of Ovarian Cystoma, and Procidentia Uteri.

No one at all acquainted with the character of Dr. Duncan's writings can doubt the value of this series of lectures for all who are interested in the practice of gynæcology. A full index adds greatly to their practical usefulness.

FOURTEENTH REPORT OF THE BOARD OF TRUSTEES OF THE CONNECTICUT HOSPITAL FOR THE INSANE, etc., etc. 1880, 8vo, pp. 48.

THE report of the superintendent, Dr. A. M. Shew, shows a satisfactory condition of affairs in this well-known institution. 664 patients have been treated during the year, of which number 19 have died. The price of board has been $3.75 per week, and the average cost of each patient $3.80 for the same period.

THE HAIR. Its Growth, Care, Diseases, and Treatment. By C. HENRI LEONARD, M.A., M.D., etc. 116 Illustrations. Detroit: C. H. Leonard, 1880. 8vo, pp. 316. $2.00.

IN this work the author has not only disscussed very thoroughly the ordinary topics relating to the hygiene and affections of the hair, but has gone very extensively into a resumé of the fashions of hair-dressing, and the anomalies of development of the capillary growth; so that, aside from its scientific merits, the work possesses unusual value from the interesting nature of its contents. The author has evidently given much time and research to its preparation and has published it in an attractive and readable form.

HEADACHES: Their Nature, Causes, and Treatment. By WILLIAM HENRY DAY, M.D., etc. Third Edition. Philadelphia: Lindsay & Blakiston, 1880. 8vo, pp. 322. $2.00.

THE earlier editions of this work have already met with a favorable reception. The author has evidently acquired a considerable experience in this class of affections and has made it the basis of a very thorough consideration of the topic in a manner calculated to be practically useful to his readers. Those portions which relate to therapeutics are well elaborated.

THE POISON REGISTER, AND POISONS AND THEIR ANTIDOTES. By JOHN H. NELSON, Cleveland, Ohio.

IN nearly all of the States the laws require the registration of poisonous substances retailed by druggists, and a register, like the one here referred to, becomes almost a necessity. Its value is very much enhanced by the information which it contains in relation to doses of various poisons; their antidotes, and the laws of each State which apply to their sale.

The book is 8 by 10 inches in size, is made of good materials, and ruled and lettered to accommodate the following items of record: Date, Time, Name of Poison, Quantity, For what purpose, For whom purchased (age, sex, and color), Name of Purchaser, Residence of Purchaser, From whom purchased, Witness' signature.

OUR HOMES. By HENRY HARTSHORNE, A.M., M.D. Philadelphia: Presly Blakiston, 1880. 50c.

THIS belongs to the series of American Health Primers, which has already been noticed by us. Its author is among the best known and most instructive writers upon hygienic topics, and the present work will be well worthy of the series. Its chapters relate to Situation, Construction, Light, Warmth, Ventilation, Water Supply, Drainage, Disinfection, Population, and Workingmen's Homes.

PRESCRIPTION DEPARTMENT NOTICE.

THE same publisher has prepared a sheet to be framed and hung conspicuously with a view to prevent the asking of numerous questions that more or less often occur to the minds of customers. We have known of a builder posting up a series of questions and answers, to avoid annoyance on the part of loungers and passers-by, such as, "This building is to belong to John Doe. It is to be used as a dry-goods store. It will cost $50,000 (more or less). The foundations will be twenty feet deep. It will be four stories high," etc., but we question the business policy of serving customers in this manner. They are apt to give the proprietor credit for being churlish and to patronize some one more affable.

PHOTOGRAPHIC ILLUSTRATIONS OF SKIN DISEASES. By GEORGE HENRY FOX, A.M., M.D. New York: E. B. Treat, 805 Broadway. 4to. $2.00 per part.

PARTS 5 and 6 of this handsome atlas have come to hand, completing the first half of the series. The plates and text of these two numbers relate to the following affections: *Eczema* (infantile, papulosum, ichorosum, pustulosum, squamosum, barbi, manum et venis varicosis); *Ulcus* varicosum, and *Psoriasis* annulata, ten plates in all. These have all been well chosen and show with great fidelity the nature of the various affections. The plates will ordinarily attract the most attention, but the value of the text is not inferior to them in usefulness.

PROCEEDINGS OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, at the Twenty-seventh Annual Meeting, Held at Indianapolis, Ind., Sept. 9th, 1879. Also the Constitution, By-laws, and Roll of Members. Philadelphia: Sherman & Co. printers. 8vo, 1880, pp. 910.

THE above-mentioned volume comes to hand just as we are preparing to go to press, and we shall be obliged to reserve until our next issue any extended discussion of its merits. We will here remark only that it is smaller somewhat than its predecessor, owing to a choice of thinner paper. The beauty of the work is, however, by no means impaired thereby. An artotype of the late Eugene L. Massot, of St. Louis, serves as a frontispiece. Following the usual prefatory matter, Prof. Diehl's Report on the Progress of Pharmacy extends to page 548. Mr. W. H. Wickham's Report on the Drug Market is unusually complete, covering ninety pages. Special reports and essays, to the number of fifteen, occupy over sixty pages. Mr. Wellcome's paper, which was late in being prepared, owing to unavoidable delay, and which appears as an appendix, narrates at some length his visit to the native Cinchona forests of South America, and is an interesting feature of the volume. Altogether the volume impresses us most favorably.

## Correction.

**Lochman's Botanical Photographs.**—In our review contained in the last number of this Journal, we stated that the price of the plates, so far as published (54 in number), if ordered *unmounted*, is $1.50. This should have been $4.50—remarkably cheap at that.

**Advices** from Europe and Smyrna make it appear probable that before the end of the year the price of opium will be very high. A combination of wealthy speculators has been formed to purchase and hold the crop, and it is not unlikely that East Indian opium may come into our market.

# CORRESPONDENCE.

## BRINSMADE'S POWDER.

EDITOR OF NEW REMEDIES:—In the last number of your Journal, you ask for the formula of "Brinsman's (camphorated) Dover's Powder." I think L. R., Jr., meant *Brinsmade's* powder. It is not, however, a "*Dover*," as it contains neither ipecac nor opium. The formula is:

℞ Morphiæ sulphatis.....gr. ⅙.
Camphoræ,
Cretæ præparatæ,
Sacchari albi.....āā gr. iij½.

or ʒ i. of the former and ʒ xx. of each of the latter, and then gr. x. of the mixture will contain nearly ⅛ gr. of sulphate of morphia which is the usual dose.

The foregoing is very like the Tully's powder which is very popular hereabouts.* The formula is

℞ Morph. sulph.....gr. ⅙.
Camphoræ pulv.....gr. i.
Pulv. rad. glycyrrh.....gr. vij.

This Dr. Tully considered equivalent to gr. x. of *Dover's* powder, which is doubtful, as it contains no ipecac. The following is an excellent substitute for the Dover's powder. It is less disagreeable to the taste, and is productive of good effects in acute affections of the broncho-pulmonary mucous membrane.

*Schuyler's Powder.*

℞ Morphiæ sulph.....gr. ⅛ to ⅙.
Camphoræ pulv.,
Ipecacuanhæ.....āā gr. i.
Pulv. glycyrrh.,
Pulv. sacch. alb.....āā gr. iv.

C. C. SCHUYLER, M.D.

TROY, N. Y., March 27th, 1880.

## A PRESCRIBER'S GRIEVANCE.

MY attention is called to the ever interesting subject of the relations of physician and pharmacist to each other by an article in No. 13 of the *Medical Record*. In this article it is stated that physicians are already, in a quiet way, attempting to dispense with drug stores, by procuring their own drugs at wholesale—the reasons given therefor being the high prices charged by pharmacists, and counter prescribing. Now as to the latter I believe that in most cases no harm is done, though it would perhaps be better if they all steadfastly refused to prescribe; with the former my experience has been that those who are able to pay are required to pay a full price, and I have also found that any respectable pharmacist will give a liberal discount to those whom the physician declares unable to pay full prices and I have further known them to *give* their medicines to the very poor. I call attention to this to give, if possible, greater force to what I have to complain of, and the actual cause of this letter. Some time ago I was called to see a gentleman who had had several physicians before he sent for me. I accidentally learned that he had for the past three years been procuring his medicines in an excellent store in this city. I prescribed and made another visit in a few days. You can imagine my astonishment when my patient informed me that the "head clerk" thought very favorably of the prescribed remedies. He was also as gracious to the next three or or four prescriptions. In an evil hour, as it appears, I consented, at the request of the patient's friends, to meet in consultation one of our most celebrated physicians. At his suggestion another remedy was added to what he had already taken. On my subsequent visit I learned that the "head clerk" did not like *that* medicine at all and that, after he had heard some of the symptoms, he gravely shook his head and said that the patient would surely die soon! It must be very apparent to every one that this is unwarranted interference, due perhaps to thoughtlessness rather than malice. As this is not an occurrence of rarity, but one happening quite frequently, I think that if you would lay this subject before your readers it would surely prevent its occurrence.

Yours truly,

EMIL MAYER, M.D.

33 Rivington St., March 29th, 1880.

## PEPSIN AS A REMEDY FOR SLEEPLESSNESS.

I HAVE for more than twenty years, on the average, seldom slept more than two to three hours per night. I mean sleep—not lying still and shutting the eyes. Many nights, particularly if going to bed after midnight, not a wink! It was so regular that, when I woke up, I always was sure it was about 1:30 o'clock, and seldom guessed wrong. Well, I tried everything excepting opium, morphia, and chloroform, which I did not like to begin with. About two months ago I began with laudanum, and not liking the after-effects, took hold of morphia. First, ½ gr., then ¼ gr., and, once in a while, ½ grain. I cannot say that I slept very much more; but in my waking state, where I formerly used to fret and get out of humor, I now did not care about anything, and thus passed the nights somewhat better. I broke off the morphia some two weeks ago, and now think that I have found the right thing for me—pepsin! You will laugh, of course; but when sleeplessness arises also (besides other causes) from a lazy or filled stomach, a good dose of pepsin (I take at night ½–1 teaspoonful—once in a while 2—of saccharated pepsin plus a little muriatic acid lemonade) makes me oblivious for four to five hours at least; and that is all I want, be that sleep or no sleep. Dyspepsia being the American root of all evils, par excellence, I should think might be at the bottom of much of the sleeplessness. At all events, pepsin can do no harm, except to an ulcerated stomach. Pepsin without acid does no good.

Since I mention pepsin, may I ask whether you ever tried dextrin as an adjuvant, or by itself.*

Very respectfully yours,

H. M. WILDER.

NEW YORK.

## NEW BOOKS.

**Rains** (Geo. W., M.D.). Chemical Exercise in Qualitative Analysis for Ordinary Schools. Cloth, 50c.

**Franklin** (Prof. E.). Water Analysis. 8vo.

**Meigs** (Forsyth, M.D.). On the Internal Use of Water for the Sick, and on Thirst. 12mo.

**Richter** (Dr. V. v.). Chemie der Kohlenstoffverbindungen; oder Organische Chemie. 2te Aufl. 8vo. Bonn, 1880. 11*m*.

**Fischer** (Dr. Ferdinand). Die Chemische Technologie des Wassers. Vol. II. (concluding the work), 8vo. Braunschweig, 1880.

**Gordon** (George). The Pinetum: Being a Synopsis of all the Coniferous Plants at present known. New ed. (Bohn). 8vo, pp. 504. 18*s*.

**MacMunn** (C. A.). The Spectroscope in Medicine. With three Chromo-Lithographic Plates of Physiological and Pathological Spectra, and 13 Woodcuts. 8vo, pp. 190, London. 9*s*.

**Dillnberger** (Dr. E.). Therapeutisches Recept-Taschenbuch für innere und äussere Krankheiten mit Einschluss d. Augen-, Ohren- und Hautkrankheiten nach der Wiener Schule. 7te Aufl. 16mo, Wien, pp. 329. $1.50.

DIAGNOSIS PLANTARUM NOVARUM VEL MINUS COGNITARUM MEXICANARUM ET CENTRALI-AMERICANARUM. Pars 2, Auctore W. B. HEMSLEY, A.L.S. 8vo, London, 1879. (From the author.)

* This is not the *original* formula of Tully's Powder, but one of its modifications, of which there are quite a variety in use, in different sections of the country. The true Tully's powder contains: Morph. sulph. 1 gr.; Camphor, Powd. Liquorice Root, and Chalk, each 20 grs.—ED. N. R.

* We have no experience with the use of dextrin as a substitute for pepsin. Have any of our readers tried it?—ED.

# NOTES, QUERIES AND ANSWERS.

*Under this heading we shall, to the best of our ability, endeavor to answer such questions addressed to us, as come within the scope of this journal, provided they are accompanied by the name and address of the writer. Answers to queries received after the 5th of the month will lie over until the next issue. Unless special instructions to the contrary accompany the query, the initials of the correspondent will be quoted at the head of each answer.*

*When asking for the formula of an unusual, patented, or proprietary compound, always accompany the query with any information you may already possess regarding the locality in which it is used, its use and reputed effects, in order to enable us to make inquiry without waste of time and labor. When it can conveniently be done, send also a specimen of the label used on packages of the compound.*

No. 712.—**Dika** (R. W., N. Y.).

We do not know whether the true botanical source of this spice has been cleared up since the recent publication of Dr. Reinhold Bucholz's travels in Western Africa. He found it in use among the Fan-negros and the Bakeles. It occurs in form of lumps of a cacao-like mass, which is kept suspended in huts. This mass is prepared from a plum-like fruit, named by Europeans living there "bush-mango." It grows on very high, handsome trees, often of very large diameter, has small grayish-yellow flowers, resembling those of the maple; the fruit ripens in December and is then converted, with the addition of another nut-like fruit, into the brown mass called *dika*. The latter is described as exceedingly savory, particularly if used for sauces in conjunction with pepper, and is considered by Bucholz to be the most valuable condiment of the west coast of Africa. It is abundant in the neighborhood of the Gaboon and the Rembo.

No. 713.—**Montgomery Hair Restorer** (M. E., Philadelphia).

The analysis of this hair dye was not, as you suppose, published in *Hager's Pharmaceutische Praxis*, but in an article by M. Benjamin, on "Dangerous Cosmetics," in this journal, Nov., 1878, p. 326. It is a colorless solution containing a pale-yellow sediment. According to Mr. Benjamin, this is chiefly sulphur, and the solution contains on an average 3.24 grains of lead, in form of acetate, per fluid ounce.

No. 714.—**Prescriptions** (R. S., Kansas City, Mo.).

Our correspondent asks us certain questions regarding the following prescriptions, not so much for his own information, but to convince some physicians who differed from him in opinion, and desired the subject to be referred to us:

1. Hydrarg. chlor. corros.....gr. 5½
   Ext. Berberidis aquifol. fl.....fl. ℥ 6 M.

The prescribing physician claimed that this should not form a dark-colored mixture. Our correspondent adds that he insisted it should be dark-colored, that is, the color of the fluid extract would not be altered by the corrosive sublimate. This is precisely our opinion; there is no possible reason for a change in color.

2. Tinct. cinchon. co. (detannated),
   Elixir simplicis.....āā fl. ℥ 2
   Tinct. nucis vomicæ .....fl. ℥ 2
   Ferri lactatis..... ℥ 2 M.

Our correspondent maintained that the 2 ℥ of lactate of iron were not soluble in the quantity of liquids prescribed. The physician, however, claimed that they were.

The *officinal* lactate of iron is a *ferrous* salt, and, if properly prepared and kept dry, may be preserved unaltered. This requires for solution 48 parts of water at 50° F., and 12 parts of boiling water. It is insoluble in cold alcohol. The above mixture directs a solution of 2 ℥ of the salt in 34 fl. ℥ of a hydro-alcoholic mixture, which is clearly unable to dissolve the salt. If, however, the lactate of iron had been damp or been kept in solution for some time, it would be partly or entirely changed to a ferric salt, which is exceedingly deliquescent and also soluble in alcohol. But this form of lactate of iron is not intended to be dispensed.

715.—**Vals Mineral Waters** (J. S. L., Buffalo, N. Y.).

This is one of the most extensively used mineral waters of France, particularly in France itself, and enjoys a high reputation as a valuable adjunct in the treatment of various diseases. Balneologists classify the waters of Vals into two principal divisions, of which the first includes the five springs, Saint-Jean, Précieuse, Désirée, Rigolette, and Magdeleine, which are principally alkaline carbonated waters with only very small quantities of iron, traces of arsenic, and iodine. The other class consists of the water of the Dominique spring, which contains iron, phosphates, arsenic, and free sulphuric acid. It is remarkable that a highly *acid* water like the latter should be found within a comparatively short distance of decided *alkaline* springs. The analysis of the several kinds of Vals waters, made by Ossian Henri, of Paris, showed them to contain in 1000 parts, besides free carbonic acid:

| | Saint-Jean. | Précieuse. | Désirée. | Rigolette. | Magdeleine. |
|---|---|---|---|---|---|
| Temperature | 13°C. | 15°C. | 16°C. | 16°C. | 15°C. |
| Bicarbonate. Calcium | 0.310 | 0.630 | 0.571 | 0.259 | 0.520 |
| Bicarbonate. Magnesium | 0.120 | 0.750 | 0.900 | | 0.672 |
| Bicarbonate. Sodium | 1.480 | 5.940 | 6.040 | 5.800 | 7.280 |
| Bicarbonate. Potassium | 0.040 | 0.230 | 0.263 | 0.265 | 0.255 |
| Bicarbonate. Lithium | trace | trace | .... | trace | trace |
| Bicarbonate. Iron | 0.006 | 0.010 | 0.010 | 0.024 | 0.029 |
| Sodium arseniate | trace | trace | trace | trace | trace |
| Sod. and pot. chloride. | 0.060 | 1.080 | 1.100 | 1.200 | 0.016 |
| Sodium sulphate | 0.054 | 0.185 | 0.200 | 0.220 | 0.035 |
| Calcium sulphate | 0.070 | | | | |
| Alumina | 0.011 | 0.060 | 0.058 | 0.058 | 0.097 |
| Iodine | trace | trace | trace | trace | trace |
| Organic matter | .... | little | .... | .... | .... |

The water of the Dominique spring has not been completely analyzed quantitatively. But the important constituents have been determined by O. Henri as follows (in 1000 parts):

| | |
|---|---|
| Sulphuric acid, free | 1.30 |
| Silicic, arsenic, phosphoric, and sulphuric acids, in combination with iron; together with sulphate of calcium, chloride of sodium, and organic matter | 0.44 |
| | 1.74 |

The alkaline waters of Vals have been used with benefit in dyspepsia, chronic gastritis, hepatic calculi, vesical calculi, cystitis, leucorrhœa, and other complaints, particularly also in rheumatism and gout. The acid water of the Dominique spring is considered beneficial in chlorosis, anæmia, cachexy, enlargement of spleen, and a scrofulous diathesis.

You may obtain these waters from J. Milhau's Son, 183 Broadway, N. Y.

No. 716.—**Hydrated Succinate of Iron** (Wm. S., M.D.).

We have no personal experience with the proprietary preparation you mention. But so far as the chemistry of succinate of iron is concerned, we may state the following:

Succinic acid, $H_2C_4H_4O_4$, which may be obtained by the distillation of amber, and is also produced from a large number of organic substances by oxidation, or fermentation, forms, when pure, rhombic or six-sided scales, colorless and odorless, of an acid and warm taste, which are soluble in 23 parts of cold, and 3 (according to Bour-

goin in less than 1 part) of boiling water. It is a bibasic acid, forming neutral ($X_2C_4H_4O_4$), and acid ($XH.C_4H_4O_4$) salts. The salts of the alkalies and of magnesia are easily soluble in water. Their moderately diluted solution precipitates ferric salts, also the salts of the alkaline earths, of lead, silver, tin; chloride of chrome, mercurous nitrate and mercuric acetate; but *not* mercuric nitrate or chloride, nor ferrous, manganous, and certain other salts. The insolubility of *ferric* succinate is used in analysis as a means of separating *ferric* from *ferrous* (or manganous) salts. On adding the solution of an alkaline succinate to a solution of ferric chloride, there is produced an abundant gelatinous precipitate of a basic ferric succinate, insoluble in water and alcohol, but easily soluble in mineral acids. According to Spiller, succinate of iron is not precipitated in presence of citrate of sodium.

We regret that you did not send us a sample of the preparation in question, as it would probably have aided us in giving a more explicit answer.

No. 717.—**Tonic in Anæmia** (W. S. McC.).

This correspondent asks whether there is not an error in a formula for a Tonic in Anæmia, which we published in our volume for 1877, p. 190. There is, and the formula should read as follows:

| | |
|---|---|
| ℞ Tinct. ferri chlor. | fl. ʒ 3 |
| Potass. chlorat. | ʒ 1 |
| Sol. strychniæ sulph. (1 gr. in 1 fl. ʒ) | fl. ʒ 2 |
| Syrupi simpl. | fl. ʒ 4 |
| Aquæ. | q.s. ad fl. ʒ 4 |

M. Two teaspoonfuls (corresponding to ⅓ grain of sulphate of strychnia), three times daily, as a tonic in anæmia.—Dr. D. S. Brainard.

No. 718.—**Prescription** (C. C. G., Trenton, N. C.).

This correspondent says: The following prescription was handed to me by a doctor, on Feb. 28th, to dispense. What do you make of it, and how about the Latin?

| | |
|---|---|
| ℞ Tr. ferri chlor. } Chlorate Potassa } āā | ʒ ii |
| Sulph. Murate | grs. i |
| Acid Muriatic Dilute | ʒ ii |
| Aqua distill. | ℥ ii |
| Simple Syrup | ʒ iii |

M. Fiat Sol. (*Copied verbatim*). We think very little of it, and about as much of the Latin. The "Sulph. Murate" was *probably* intended for "Sulph. Morphia," but we would not advise you to put up such a prescription without consulting the author of it. Indeed, we would not have thought it worth while to print the prescription here, with this answer, if we had not received lately some other curious specimens of physicians' prescriptions, all of which show carelessness and hurry, and should serve as a warning, both to the prescriber and the dispenser, to bestow the requisite care and attention both while writing and while compounding prescriptions.

No. 719.—**Amsterdam or Dutch Curacao** (H. R., W. Philadelphia).

The following is said to be the formula: ½ pound of fresh bitter orange peel, finely cut, is mixed with 4 pounds of strong alcohol and ½ pound of water, and very slowly distilled, until 2 pounds of distillate are obtained. This is then mixed with 2 pounds of tincture of orange peel (2:5) and afterwards with 10 pounds of a mixture prepared from 26 parts of alcohol, 18 parts of water, and 1 part of glycerin. We have no personal experience with this formula, but give it on the authority of *Gaber*.

No. 720.—**Decolorized Tincture of Iodine** (Ohio).

A *decolorized* tincture of iodine does not contain free iodine. Iodine, if free, always retains its characteristic color and odor, whether dry or in solution. When these have disappeared you may safely assume that the iodine has entered into some combination. Decolorized tincture of iodine is by no means as powerful a counter-irritant as the original tincture; yet it possesses still some valuable properties.

There are several methods for decolorizing the tincture. The German Pharmacopœia has an officinal decolorized tincture, which is prepared as follows:

| | |
|---|---|
| Iodine. | 10 parts. |
| Hyposulphite of sodium | 10 " |
| Distilled water | 10 " |

Digest them at a gentle heat, with agitation, until solution is effected, then add,

| | |
|---|---|
| Spirit of ammonia | 16 parts. |

Shake a few minutes, and add,

| | |
|---|---|
| Alcohol (0.830–0.834) | 75 parts. |

Set aside for 3 days in a cool place and filter.

The product is a clear, colorless solution of a peculiar faintly ammoniacal odor, having the spec. grav. 0.940–0.945.

This formula was originally proposed by Hager. It contains iodide of ammonium, iodide of ethyl, and iodide of triethylammonium, which latter is gradually converted into iodide of ethyl and trimethylamine. Besides, there is present a little iodide and sulphate of sodium.

Dr. C. O. Curtman's formula is:

| | |
|---|---|
| Iodine. | ʒ 10 |
| Alcohol | fl. ℥ 13 |
| Ammonia | fl. ʒ 3 |

Mix.

This will become decolorized only after long standing (about 27 days), but the resulting solution is much less complicated than the former.

No. 721.—**Betin or Betain** (J. C. C., Covington, Ga.).

This is a feeble organic base, first obtained by Scheibler from the juice of the sugar-beet (*Beta vulgaris*, L. and *var.*), from which it has its name, and afterwards obtained by Liebreich through the oxidation of choline, a principle found in the gall, in the brain, in the yolk of egg and closely related to neurine, whence it has also received the names *oxycholine* or *oxyneurine*. It is also produced by the action of trimethylamine on monochloracetic acid.

It is prepared from beet-juice, or diluted beet-sugar molasses, as follows: These liquids are mixed with basic acetate of lead in slight excess; the lead is removed from the filtrate by diluted sulphuric acid, and the acid solution mixed with phosphomolybdate of sodium. The resulting precipitate is allowed to settle, decomposed by milk of lime, and from the resulting filtered solution the betain obtained by evaporation and recrystallization from alcohol. It forms large shining crystals, of a musk-like odor, having the composition $C_5H_{12}NO_2.H_2O$; the water of crystallization being lost at 100° C., or when exposed over sulphuric acid. They are extremely deliquescent. Beet-juice yields about ¼% and beet-sugar molasses about 3% of betain. According to Schultzen, it has no poisonous effects on animals.

There are no reliable therapeutic experiments with betain on record. We trust you will not place the slightest confidence in statements contained in the publications of quacks, to which category belongs the "journal" you mention in your letter.

No. 722.—**Polish for Wood** (C. A. G., Hartford, Ct.).

This correspondent asks us for the formula of a "filler" for wood, which will not stain; or, in other words, for a "first-class polish."

We know of at least three good agents which will accomplish this. Which one is to be used, depends much on the quality of the wood and the experience of the user.

1. 4 parts of white wax are added to 3 parts of oil of turpentine, and the whole is heated in a flask or bottle, immersed in hot water, until the wax is liquefied and almost dissolved. It is then allowed to cool, and when it begins to turn white and to harden, 2 parts of strong alcohol are added, under stirring. This mixture is applied by means of a woollen cloth, and thorough friction. The alcohol may be increased to 4 parts, but the friction must then be continued for a longer time.

2. One pint of linseed oil, together with 2½ oz. of alkanet root, are heated to boiling in a clean pot over a slow fire, and kept at a gentle boil for about two hours.

When cool, the mixture is applied in a thin layer to the wood, and after the lapse of 24 hours, well rubbed in.

3. The best polish, particularly for fine woods, is *milk!* After all dust and dirt has been carefully removed, good fresh milk is applied to the wood, and well rubbed in with a woollen rag, until all moisture has disappeared. This must be repeated several times, and in the case of new utensils should be done once a week. Milk has this preference, that its fatty substance answers the same purpose as linseed oil, and its other constituents act as a filler, while it leaves no disagreeable flavor. For some light-colored woods sublimed sulphur with boiled oil make a very good filling.

*One* ingredient, however, is necessary in all of the above processes, without which success will not be attained, and this ingredient is *adeps cubitalis*, vulgo "elbow-grease."

No. 723.—**Elixir and Emulsion of Salicylic Acid and Elixir of Salicylate of Sodium** (G. H. F., Toledo, O.).

The disagreeable and harsh taste of free salicylic acid makes its administration, in *solution*, difficult and inconvenient. No matter what correctives may be used, the mixture will always have a disagreeable taste. One of the least nasty mixtures, perhaps, is the following:

*Elixir Acidi Salicylici.*

| | | |
|---|---|---|
| ℞ Acid. salicylic | grs. | 160 |
| Potass. acetat | " | 320 |
| Glycerini | fl. ʒ | 1 |
| Elixir. simpl. q.s. ad | fl. ʒ | 4 |

M. Each teaspoonful contains 5 grains of salicylic acid. A better form of administration is the following:

*Emulsio Acidi Salicylici.*

| | | |
|---|---|---|
| ℞ Acidi salicylici | grs. | 30 |
| Olei amygdalæ | fl. ʒ | 5 |
| Acaciæ | ʒ | 2½ |
| Aquæ aurant. flor | fl. ʒ | 6 |
| Syrupi amygdalæ q.s. ad | fl. ʒ | 3 |

M. Fiat emulsio. Each tablespoonful contains 5 grs. of the acid.

During the last few years it has been ascertained that the effects of salicylic acid are identical, whether it be free or in combination. Now, as the alkaline salicylates are devoid of any disagreeable taste, it is preferable to choose the latter, in place of the acid itself. The salt most commonly used is the salicylate of sodium, which is soluble in an equal quantity of water. It may be prepared *ex tempore*, by remembering the following proportions:

60 parts of pure bicarbonate of sodium, or 37.8 parts of pure anhydrous carbonate of sodium, and 100 parts of salicylic acid produce 130 parts of salicylate of sodium.

*Elixir Sodii Salicylatis.*

| | | |
|---|---|---|
| ℞ Sodii salicylatis | grs. | 40 |
| Aquæ | fl. ʒ | 2 |
| Elixir. simpl. q.s. ad | fl. ʒ | 1 |

Mix, and dissolve. If the salt should not at once dissolve completely, this is owing to the fact that all alkaline salicylates, as turned out by manufacturers, are not neutral, but contain a slight excess of salicylic acid. This is necessary, since it has been found that the slightest excess of alkali tends to color the salt brown. Hence, rather than to attempt the preparation of a strictly neutral salt, manufacturers prefer to keep it very slightly acid. The alcohol, in the above mixture, assists the solution of any slight excess of salicylic acid, so that a clear mixture will result, even though the quantity of the salt be much larger.

No. 724.—**Economy in Ice for Soda-Water** (H. & A.).

Our correspondents write:

"In view of the great scarcity of ice for the ensuing summer, is it not pertinent to ask: How shall we cool our soda water, and other summer beverages, drawn from the fountain? We at least would be glad of advice and instruction in the most practical, inexpensive, and neat modes of accomplishing the desired object—at the same time avoiding corrosion of the metallic parts of the draught apparatus and staining of the marble, etc."

This is a very sensible question, and has probably already occurred to a number of our readers. Unfortunately, there is no suitable substitute even for comparatively dear ice, except for very large consumers.

The production of cold, or, in other words, the transfer of heat from one body to another, can only be accomplished by a certain energy or amount of force. While nature, during winter time, employs this force gratuitously, so that ice may be obtained merely at the expense of gathering, storing, etc.; in the absence of natural ice, a certain amount of artificial force is required to accomplish this object. Whether this be man power or machine-power it makes no difference; at all events, we cannot produce cold without some sort of energy or force; but this very energy, as a rule, costs more on a small scale than the product is worth.

The so-called freezing mixtures, of course, also represent an expenditure of force; and their use seems to have been suggested to you, to judge from the remarks at the end of your note. But, in the first place, they are sure to injure your apparatus sometime or another, and besides, they will stock you in time with a large quantity of residuary products, which will be useless.

Ice-machines can be used to advantage on a small scale only if the power necessary for their operation can be obtained at a merely nominal expense. If there is a large engine, running a factory, within reach, such ice-machines would be economical. Otherwise they will not pay, except very large ones, which manufacture ice as a business for many customers, or for one large establishment. Should you be so situated as to be able to use an ice-machine, we may, if you desire, give a description of one or another such machine hereafter.

We have consulted on this subject with prominent manufacturers of soda water apparatus, and they all agree with us, that there is really nothing that could *safely* take the place of ice.

But there seems to be a way to alleviate the evil. This is by *co-operation*. Let your firm, together with other prominent consumers of ice, procure a suitable store-house in the course of the summer, and put in for your own use during winter-time such a stock of ice as will last you throughout the next summer. Even now, such ice-houses may be stocked in cities and towns readily accessible from the sea, by bringing ice from the coast of Maine and northward. Taking all things into consideration, we think this plan will be found the most feasible.

No. 725.—**Syrup of Lactophosphate of Calcium** (Subscriber).

Dr. Hermann Hager's formula is as follows:

| | |
|---|---|
| Lactate of calcium | 2 parts. |
| Diluted phosphoric acid, spec. gr. 1120. | q. s. |
| Sugar | 130 parts. |
| Water | q. s. |

Dissolve the lactate of calcium in 60 parts of water; then add to the solution, under constant agitation, 8 parts of the diluted phosphoric acid, and set the mixture aside for half an hour, occasionally stirring. Should the solution be turbid at the expiration of the time, add to it sufficient diluted phosphoric acid to produce complete solution or nearly so. Then filter, and dissolve the sugar in the filtrate.

The resulting syrup should weigh 200 parts.

A fluid drachm of this contains a little over 1 grain of lactate of calcium.

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**Correction.**—In the article by Mr. Edo Claassen, "Formulæ for Increasing and Decreasing the Strength of Liquids to any Desired Degree," published in our March number, page 75, 2d col., II., 1. read: To find $x$ (the quantity of the weaker liquid), multiply the difference between the percentage of the stronger liquid and the desired percentage of the mixture *by the desired weight of the mixed liquids*.

## TRADE NOTES AND NOVELTIES.

CAMPBELL, HALL & Co., of 110 and 112 Nassau st., New York, are manufacturers of a **Carbolized Paper,** patented by Page & Rodgers, which has been extensively used (to judge from numerous certificates by Quartermasters of the army) by the United States Government, for the preservation of clothing from moths and mildew, and with unvarying success. For domestic use the sheets are quite as well adapted as camphor, tobacco, or hellebore, and are considerably cheaper than the former, 25 sheets, 6x9½ inches, retailing for 25c., or $3.00 per ream of 20 quires. Those who are laying in their stock of "moth-protectors," will do well to give this article a trial.

If our friends in Memphis are to have another epidemic of yellow fever this year, these carbolized sheets might readily come into fashion for purposes of correspondence.

THE CHESEBROUGH MANUFACTURING CO., whose **"Vaseline"** has now become known almost universally, have been led, by numerous demands for ointments and cerates prepared with this for a basis, to add to their list of preparations the following: Mercurial Ointment, Ointment of the Oxide of Zinc, Ointment of the Nitrate of Mercury (citrine ointment), Cerate of the Subacetate of Lead (Goulard's cerate), Camphorated Ointment (French), and simple cerate (white).

These differ from those which are officinal only in the substitution of vaseline for the lard and wax, and may be prepared equally well by pharmacists who will give themselves the trouble to do so; the appearance of the samples with which we have been favored is, however, superior to that of many of the officinal preparations commonly met with.

The principal advantage claimed for ointments thus prepared is their inability to become rancid. The importance of this feature will be especially apparent in the case of Goulard's cerate and the ointment of oxide of zinc, but there is still another advantage which we do not remember to have yet seen mentioned; that is, the value of these soft paraffins as a vehicle for substances which are used for inunction, as in the case of mercurial ointment. The readiness with which these substances penetrate the skin is considerably greater than exists in the case of lard, and renders their use preferable on this account.

We have heard it stated that ointments made with soft paraffins are liable, in time, to separate into strata of various densities, especially when heavy substances like mercurials are among the ingredients. We shall be glad to hear if this has been observed to any extent, and under what circumstances. Messrs. Colgate & Co., 55 John st., are the agents, and the ointments sell for 75c. per lb.

**The "Perfection Tooth-Brush,"** for which TURNER & WAYNE, of 530 Arch street, Philadelphia, are the general agents, has a hollowed face, with bristles set at an increasing angle as they approach the extremities, so that the ends, and not the sides, are applied against the teeth when the brush is used.

The proper mode of using a tooth-brush is with an up-and-down motion, and this arrangement of bristles renders the operation far more effective than is the case with the usual form, since the ends of the bristles come in contact, not only with the fronts of the teeth at one point, but are inserted between them as well, over a surface corresponding to the entire height of the brush.

Those who wish a perfect **Tin Box,** anywhere from 1 inch to 2½ inches in diameter, will do well to try the seamless boxes made by H. F. MILLER, of No. 1 East Falls avenue, in Baltimore, Md. They surpass in neatness anything we have yet seen in the shape of metal boxes, and for certain purposes are superior to those made of wood or paper. The same manufacturer can furnish oval boxes for tooth-powders and blacking boxes, in standard sizes, from Nos. 1 to 6.

## PRESCRIPTIONS AND FORMULÆ.

*We shall be obliged if our readers, who make use of these formulæ, will inform us of their experience with them, and note any errors or modifications worthy of attention.*

**Elixir Potassii Bromidi.**—*Elixir of Bromide of Potassium.*

[One fluid drachm contains 5 gr. of the salt.]

| | |
|---|---|
| Bromide of potassium | 640 grs. |
| Elixir of orange | 16 fl. oz. |

Dissolve.

**Elixir Pruni Virginianæ Ferratum.**—*Elixir of Wild Cherry and Iron.*

| | |
|---|---|
| Tasteless tincture of iron | 10 fl. oz. |
| Fluid extract of wild cherry | 1 " |
| Elixir of orange | 14 " |

Mix.

**Elixir Rubi Trivialis Compositum.**—*Compound Elixir of Dewberry Root.*

| | |
|---|---|
| Dewberry root, in coarse powder | 4 ℥. |
| Nutgalls, in powder | 240 grs. |
| Kino, in powder | 240 " |
| Cinnamon, in powder | 120 " |
| Cloves, in powder | 60 " |
| Capsicum, in powder | 10 " |
| Tincture of opium | 1 fl. oz. |
| Spirit of peppermint | 1½ fl. ℥ |
| Brandy | 2 pt. |
| Sugar | 14 ℥. |

Digest for fourteen days; express, filter, and dissolve the sugar in the filtrate. Dose, one teaspoonful, for an adult.

**Elixir Sodii Bromidi.**—*Elixir of Bromide of Sodium.*

[One fluid drachm contains 5 gr. of this salt.]

Take of

| | |
|---|---|
| Bromide of sodium | 640 grs. |
| Elixir of orange | 16 fl. oz. |

Dissolve and filter.

**Elixir Sumbul Compositum.**—*Compound Elixir of Sumbul.*

| | |
|---|---|
| Fluid extract of sumbul | 1 fl. oz. |
| Alcohol | 2 " |
| Elixir of valerianate of ammonium | 9 " |
| Elixir of orange | 4 " |

Mix in the above order, and filter.

**Elixir Taraxaci Compositum.**—*Compound Elixir of Dandelion.*

Take of

| | |
|---|---|
| Fluid extract of dandelion | 6 fl. ℥ |
| Fluid extract of wild cherry | 4 " |
| Fluid extract of gentian | 1 " |
| Fluid extract of licorice | 1 " |
| Elixir of orange | 14½ fl. oz. |

Mix and filter.

**Vinum Picis Liquidæ.**—*Wine of Tar.*

The formula offered by the Committee above mentioned, directs to mix 6 troy oz. of tar intimately with 2 troy oz. of carbonate of magnesium; to add 4 pints of sherry and to digest for one hour; then to filter and to add enough sherry wine through the filter to make the product measure four pints.

This formula is capable of improvement, because commercial tar generally contains more or less acid and other substances which give a disagreeable taste—not inherent to purified tar—to the product. The tar should be first washed with cold water; afterwards it may be digested with sherry wine. In the above formula the acid present in the tar is, of course, neutralized by the carbonate of magnesium; but, as the latter is in excess, a little of it goes into solution, and may cause precipitation of alkaloids, if the latter are mixed with the wine.

**Cooper's Mustard Paper,** or Sinapine Tissue.—A sheet of vellum-post paper, 13 centimetres long 7.8 centimetres broad, transparent and nearly colorless, but saturated with a gummy solution containing the acrid ingredients of euphorbium and capsicum. It has nothing to do with mustard.—*Hager.*

**Compound Iodoform Ointment in Burns.**—*Ungentum Iodoformi Compositum.*

| | |
|---|---|
| ℞ Iodoformi | 80 grains. |
| Extr. conii | 40 " |
| Acidi carbol | 10 min. |
| Ung. aquæ rosæ | 1 ʒ |

M. To be applied twice daily, with picked lint, upon the burnt parts.—*Pharm. Centralh.*

**New Pencil as a Substitute for Ink.**—We do not refer here to the aniline pencils which have been in use for some time, but to quite a different pencil, which gives a very black writing, capable of being reproduced by the copying machine, and which does not fade on exposure to light. The mass for these pencils is prepared as follows: 10 pounds of the best logwood are repeatedly boiled in 10 gallons of water, straining each time. The liquid is then evaporated down till it weighs 100 pounds, and is then allowed to boil in a pan of stoneware or enamel. To the boiling liquid nitrate of chromium is added in small quantities, until the bronze-colored precipitate formed at first is redissolved with a deep-blue coloration. This solution is then evaporated in the water-bath down to a syrup, with which well-kneaded clay is mixed, in the proportion of 1 part of clay to 3½ of extract. A little gum tragacanth is also added to obtain a proper consistence.

It is absolutely necessary to use the salt of chromium in the right proportion. An excess of this salt gives a disagreeable appearance to the writing, while, if too little is used, the black matter is not sufficiently soluble.

The other salts of chrome cannot be used in this preparation, as they would crystallize, and the writing would scale off as it dried.

The nitrate of chromium is prepared by precipitating a hot solution of chrome alum with a suitable quantity of carbonate of sodium. The precipitate is washed till the filtrate is free from sulphuric acid. The precipitate thus obtained is dissolved in pure nitric acid, so as to leave a little still undissolved. Hence the solution contains no free acid, which would give the ink a dirty red color. Oxalic acid and caustic alkalies do not attack the writing. Dilute nitric acid reddens, but does not obliterate the characters.—*Mon. Scient.* and *Canad. Pharm. Journ.*

**Colored Pencils for Writing on Glass, Porcelain, Metal, etc.**—The well-known firm of A. W. Faber, of lead-pencil fame, has obtained a German patent upon colored pencils for writing on metal, glass, porcelain, etc., the composition of which is given as follows:

1. *Black.* 10 parts finest lampblack, 40 p. white wax, 10 p. tallow.
2. *White.* 40 parts finest white lead (Kremser Weiss= Kremsan white), 20 p. white wax, 10 p. tallow.
3. *Light-blue.* 10 parts Prussian blue, 20 p. white wax, 10 p. tallow.
4. *Dark-blue.* 15 parts Prussian blue, 5 p. gum arabic, 10 p. tallow.
5. *Yellow.* 10 parts chrome-yellow, 20 p. white wax, 10 p. tallow.

**Soliani's Dentifrice.**—Luigi Soliani proposes the following liquid, containing hypochlorite of calcium, as a dentrifrice:

| | |
|---|---|
| Chloride of lime | 25 parts. |
| Distilled water | 300 " |
| Alcohol, 36% | 25 " |
| Spirit of cloves | 3 " |

Dissolve and filter. For fetid breath, mix a tablespoonful of the above with half a tumbler of water and thoroughly rinse out the mouth two or three times a day, particularly just before going to bed and after rising in the morning. To keep the teeth clean and polished, the liquid is to be applied by means of a small sponge or piece of cloth at least once a day; and afterwards, the mouth is to be rinsed with pure water. The author recommends this method highly, from experience.—*Bolletino Farmac.*

[Care should be taken, not to allow the solution to be too long in contact with the teeth, or to make it any stronger, because it would gradually attack the enamel of the teeth. If the latter have already partially lost their enamel, this dentifrice should not be used, because it will hasten the disintegration of the teeth.—ED. N. R.]

**Syrupus Stillingiæ Compositus.**—*Compound Syrup of Stillingia:*

| | Avoirdup. |
|---|---|
| Take of Queen's root (Stillingia) | 2 lbs. |
| Turkey-corn root (Corydalis) | 2 " |
| Blue-flag root (Iris versicolor) | 1 " |
| Elder flowers | 1 " |
| Pipsissewa leaves (Chimaphila) | 1 " |
| Coriander | ½ " |
| Prickly ash berries (Xanthoxylum) | ½ " |
| Sugar, refined | 24 " |
| Water | q.s. |
| Alcohol, 76% | q.s. |

Grind, and mix the vegetable drugs together, place them in a convenient vessel, cover them with alcohol of 76%, and macerate for three days. Then transfer the whole to a percolator and gradually pour alcohol on top until 4 pints of tincture have been obtained, which retain and set aside. Then continue the percolation with water, and of this second percolate reserve so much as contains a sensible amount of alcohol, and distil or evaporate the latter from it. Continue the percolation by water, until the solution obtained is almost tasteless, and boil down this weaker infusion, until, when added to the second solution, after the evaporation of its alcohol, it will make 24 pints. To these two solutions combined add the sugar, and dissolve it by heat, carefully removing any scum which arises as it begins to boil; and, if it exceeds 28 pints, evaporate to that quantity with constant stirring. Then remove from the fire, and when nearly cold, add the 4 pints of reserved alcoholic tincture and make 4 gallons of syrup, each pint of which will be equal to 4 fl. oz. of the ingredients.

This is Dr. John King's formula, published in the American Dispensatory. The 24 pounds of sugar, when added to the 24 pints of solution, will always make more than 28 pints.

**Boisragon Pills** (Dr. Hewson's formula).—

| | |
|---|---|
| ℞ Hydrarg. chlor. mit | gr. 12 |
| Pulv. scammon | " 12 |
| Extr. colocynth. co | " 40 |
| Ol. carui | ♏ 4 |
| Aloes Socotr | gr. 8 |

Make 14 pills.—C. H. Bradshaw in *Pharm. Journ.*

**Iodoferrated Cod-Liver Oil.**—The following is the process given by Mr. Sinimbergi, of Rome:

| | |
|---|---|
| Cod-liver oil | 1,000 grams. |
| Sulphuric ether | 12 " |
| Protosulphate of iron | 6.5 " |
| Iodide of potassium | 5.15 " |
| Reduced iron | 1 gram. |

Mix 3 grams of the oil with the ether, and set aside. Then rub the iodide, the sulphate, and the reduced iron together, and add a little pure glycerin to hasten the reaction. When this has taken place—which usually occurs in about two minutes—one-third of the mixture of oil and ether is gradually well mixed with the salts, and then one-third of the separate 970 grams of cod-liver oil being added, the whole is put into a well-stoppered bottle, which it fills, and having been well shaken, the precipitate is allowed to separate and the clear oil is poured off. The precipitate is treated a second and a third time, in the same manner, with the two other thirds of the menstruum. The whole is then transferred to a bottle just large enough to hold it, and after ten days of rest it is

filtered through paper. The author adds that in order to succeed it is necessary that the oil and the glycerin be of good quality; the ether, besides, should not be acid, and the iodide should not be alkaline.—*Magaz. of Pharm.*

**Application for Painful Hæmorrhoids.**—Take of—

| | |
|---|---|
| Extract of henbane | 2½ drachms. |
| Powdered saffron | 2½ " |
| Acetate of lead | 1 drachm. |
| Glycerole of starch | 1 ounce. |

To be applied twice or three times a day.—*Magaz. of Pharm.*

**Mica Varnish.**—A varnish has been prepared from mica, which promises to become a useful article, though at present it has been applied only to plaster casts and similar articles. Mica, calcined by fire or cleaned by boiling in hydrochloric acid, is reduced to as fine a powder as possible, and mixed with collodion, when it can be laid on in successive coats like paint, giving the article a silvery appearance. It may be colored by carefully grinding in the required pigment. The varnish adheres well to porcelain, glass, metal, wood, and plaster, and may be washed without injury.—*Magaz. of Pharm.*

**Brilliantine.**—This is a solution of about 1 part of castor oil in about 4 parts of cologne. The following formula is given by others:

| | |
|---|---|
| Cologne | 1 part. |
| Glycerin | 1 " |
| Honey | 2 parts. |
| Alcohol | 4 " |

**Wickersheimer's Preserving Fluid.**—We have published the formula of this fluid on page 23 of our last January number. Since then several papers on this subject have been published, the authors of which point out some apparent inconsistencies or incompatibilies of the ingredients given by the inventor. Among the criticisms, that of J. MARTENSON may be particularly quoted. He says: Alum forms one of the constituents of the liquid; probably potassic alum is meant, and in place of potassa, probably the carbonate. But under the circumstances, all the alumina of the alum is precipitated, so that the liquid does not retain any in solution. On preparing large quantities of the solution, the labor of straining or filtering from the deposited alumina is very onerous. It is much better to omit the alum, and to substitute at once that substance which was produced by it in the original liquid, namely potassium sulphate. A portion of the alum may be replaced by borax, so that the constituents will be the following:

| | |
|---|---|
| Borax | 100 parts. |
| Sulphate of potassium | 40 " |
| Chloride of sodium | 50 " |
| Nitrate of " | 30 " |
| Carbonate of potassium | 92 " |
| Arsenious acid | 20 " |
| Glycerin | 3,000 " |
| Alcohol | 500 " |
| Water | 6,200 " |
| | About 10,000 " |

The arsenious acid and carbonate of potassium are dissolved together by the aid of heat, and added to the solution of the other ingredients. (From *Pharm. Zeit.*)

In St. Petersburg hospitals, the following *preserving fluid* is frequently used:

| | |
|---|---|
| Arsenious acid | 10 parts. |
| Carbonate of sodium, cryst | 20 " |
| Water | 350 " |
| Glycerin | 650 " |

**Universal Varnish** (Hager).—

| | |
|---|---|
| Shellac | 15 parts. |
| Mastic | 2 " |
| Venice turpentine | 1 " |
| Absolute alcohol | 100 " |

This may be colored, as desired, by means of alcohol-soluble aniline or other colors.

**Spiritus Aromaticus.** *Aromatic Spirit.*

| | |
|---|---|
| Oil of nutmeg, essential | 10 parts. |
| " " lavender | 10 " |
| " " lemon | 3 " |
| " " cloves | 3 " |
| " " fennel | 3 " |
| " " crisped mint | 3 " |
| " " cassia | 3 " |
| " " melissa | 1 part. |
| Dissolve in alcohol, 90% | 1728 parts. |
| Then add the solution to alcohol, 70% | 5184 " |

*Russian Pharm. of* 1880.

**Spiritus Odoratus.** *Cologne.*—

| | |
|---|---|
| Oil of cassia | 1 part. |
| " " cloves | 1 " |
| Tincture of musk.* | 1 " |
| Oil of orange flowers | 2 parts. |
| " " " peel | 2 " |
| " " rosemary | 2 " |
| " " thyme | 2 " |
| " " lemon | 4 " |
| " " lavender | 4 " |
| " " bergamot | 18 " |
| Alcohol, 90% | 2400 " |

—*Russian Pharm. of* 1880.

**Mistura Balsami Copaivæ.** *Copaiba Mixture.*—

| | |
|---|---|
| Copaiba | 8 parts. |
| Alcohol, 70% | 8 " |
| Syrup of orange flowers † | 8 " |
| Peppermint water | 8 " |
| Orange flower water | 2 " |
| Spirit of nitrous ether | 1 part. |

—*Russian Pharm. of* 1880.

**Hager's Digestive Pellets** (*Globuli peptici*).—Dr. Hermann Hager recommends the following compound as an excellent digestive, to be taken after a hardy meal:

| | |
|---|---|
| Cinchonidia sulphate | 5.0 gm. |
| Pepsin (*not* saccharated) | 30.0 " |
| Ginger, powd | 3.0 " |
| Cardamoms, powd | 3.0 " |
| Pimento, powd | 3.0 " |
| Gentian root, powd | 6.0 " |
| Althæa root, powd | 6.0 " |
| Tragacanth, powd | 6.0 " |
| Mix and add to them a mixture of | |
| Glycerin | 10.0 " |
| Hydrochloric acid | 6.0 " |
| Water | 6.0 " |

Make into 300 (to 360) pills or globules, dry them in the open air for about 10 hours, and cover them with pill-varnish (see below.)—These pellets are useful either after a hearty meal, or in defective appetite or digestion.

In the former case, according to the degree of "fulness" felt, 4–5 or at most 6 pellets are taken, which, in the course of one hour, will cause the sensation to disappear. In defective appetite 1 to 2 pellets may be taken two or three times before the meal in intervals of one hour, and immediately after the meal 3–4 pellets. Children may take 1 to 2 In gastric disturbances one pellet may be taken every 30 minutes or every hour, best with water a little.—*Pharm. Centralh.*, 1880, 37.

**Pill-Varnish** (Hager).

| | |
|---|---|
| Balsam Tolu | 15.0 gm. |
| Resin | 1.5 " |
| Alcohol, absolute | 15.0 " |
| Ether | 100.0 " |
| Boiling water | 50.0 " |

Digest the balsam with the boiling water on a water-bath for one hour, shake frequently, then decant the liquid. To the residue add the resin, and then pour on the absolute alcohol and ether. Macerate, so as to form a tincture which is to be filtered through cotton.

* *Tincture of Musk.*—Musk. 1 part; Alcohol, 70%, 25 parts; Distilled water, 25 parts.

† *Syrup of orange flowers.*—Orange flower water, triple, 5 parts; Sugar, 1 part.

# ITEMS.

**New York State Pharmaceutical Association.**

The second annual meeting of the New York State Phramaceutical Association will be held on Wednesday and Thursday, May 19th and 20th, in the City of Syracuse. The sessions will be held in the Common Council Chamber at the City Hall, and the meeting will be called to order on Wednesday at 10.30 A.M.

In view of the important business that will be brought before the Association, it is very desirable that there should be a full attendance of members.

A most cordial invitation is extended to the entire fraternity of the State, to become members of this organization.

Any person desiring a copy of the Proceedings of the Utica meeting of May last, by addressing the Secretary, Charles H. Gaus, Albany, N. Y., will receive the pamphlet by return mail. Blank forms of application for membership will be forwarded by the Secretary to any who may desire them.

Accommodations for the members of the Association will be at the Vanderbilt House, and the local committee have secured accommodations at the rate of $2.00 per day. Similar rates have been obtained at Congress Hall and Burns House, should there be necessity for greater accommodation than the Vanderbilt House can provide.

A large room has been provided for exhibits, and a general invitation is extended to manufacturers, chemists, and pharmacists, to forward articles of interest for exhibit.

Crude drugs, chemicals, pharmaceutical preparations, chemical and pharmaceutical apparatus and utensils, and such objects as possess a general scientific or special pharmaceutical interest, are especially desirable.

All articles for exhibit should be sent (charges prepaid) to care of Brown & Dawson, Syracuse, and all exhibitors should, before May 10th, notify them of the character of the exhibit and space required.

The druggists of Syracuse have very cordially intimated that those who attend the meeting should bring their wives to enjoy some of the many attractions of Syracuse and its vicinity.

P. W. BEDFORD, *President.*

NEW YORK, APRIL 15th, 1880.

**The following Act** to regulate the dispensing and sale of poisons within this State is now before the Legislature.

*The People of the State of New York, represented in Senate and Assembly, do enact as follows:*

SECTION 1. It shall be unlawful for any person, from and after the first day of July, 1880, to sell or otherwise dispose of any of the poisons enumerated in schedules A and B, as follows, to wit:

*Schedule A.*—Arsenic and its preparations, corrosive sublimate, white precipitate, red precipitate, biniodide of mercury, cyanide of potassium, hydrocyanic acid, strychnia, and all other poisonous vegetable alkaloids and their salts, essential oil of bitter almonds, opium and its preparations, except paregoric and other preparations of opium containing less than two grains to the ounce.

*Schedule B.*—Aconite, belladonna, colchicum, conium, nux vomica, henbane, savin, ergot, cottonroot, cantharides, creosote, digitalis and their pharmaceutical preparations, croton oil, chloroform, chloral hydrate, sulphate of zinc, mineral acids, carbolic acid and oxalic acid, except in a triangular or prism-shaped bottle; and every such bottle shall, in addition, be distinctly labeled with the name of its contents, the name and place of business of the seller, and also with the word "*poison.*"

SECTION 2. It shall not be lawful for any person, except on the prescription of physician, to sell or deliver any poisons enumerated in schedules A and B unless upon due inquiry it be found that the purchaser is aware of its poisonous character, and represents that it is to be used for a legitimate purpose, nor shall it be lawful, except as aforesaid, to sell any of said poisons so enumerated as aforesaid, without, before delivering the same to the purchaser, causing an entry to be made in a book kept especially for that purpose, which entry shall state the date of sale, the name, address, and occupation of the purchaser, the name and quality of the poison sold, the purpose for which it is represented by the purchaser to be required, and the name of the dispenser; such book shall be always open for inspection by the proper authorities and shall be preserved for reference for at least five years.

SECTION 3. Any person who shall, for the purpose of obtaining any of the poisons aforesaid, make any false or erroneous statement or representation, or who shall fill or re-fill the said bottles with any other substance than the poisons named in schedules A and B, and any person offending in any respect against any of the provisions of this act shall be deemed guilty of a misdemeanor, and shall, upon conviction thereof, be liable to a penalty not exceeding five hundred dollars.

SECTION 4. This act shall take effect on the first day of July, 1880.

**College Pharmacy of the City of New York.**—The annual meeting of the College was held on Thursday, March 18th, 1880, at which time the following officers were elected for the ensuing year: *President*, Ewen McIntyre; *Vice-Presidents*, H. J. Menninger, M. L. M. Peixotto, G. C. Close; *Secretary*, H. A. Cassebeer, Jr.; *Treasurer*, Theobald Frohwein; *Trustees, to serve for three years*, P. F. Lehlbach, E. P. Nichols, G. Ramsperger, B. F. McIntyre. The following are holding over: S. H. Ambler, G. Balser, A. Tscheppe, P. Balluff, D. Hays, W. M. Olliffe, Ch. Rice, A. W. Weismann. *Committee on Pharmacopœia*, P. W. Bedford, P. Balluff, Ch. Rice. *Delegates to the Amer. Pharm. Assoc.*, Ch. Rice, F. Hoffmann, Wm. M. Olliffe, P. Balluff; *Committee of Reference*, F. Hoffmann, G. C. Close, Wm. Neergaard; this committee was afterwards reconstituted as follows: G. C. Close, Wm. Neergaard, G. D. Coggeshall; *Property Committee*, Wm. M. Olliffe, Th. Louis, D. C. Robbins, J. W. Shedden, R. Van der Emde.

At the Trustees' Meeting, held on April 1st, the following Committees were appointed: *Library Committee*, Ch. Rice, A. Tscheppe, A. W. Weismann; *Curators*, G. Balser, S. H. Ambler, Ch. Rice; *Examining Committee*, H. J. Menninger, P. Balluff, M. L. M. Peixotto, Ch. Rice, A. Tscheppe; *Lecture Committee*, G. Ramsperger, D. Hays, P. F. Lehlbach, E. P. Nichols, B. F. McIntyre.

**Pennsylvania Pharmaceutical Association.**—The next meeting of this association will be held in Allentown, on the 8th of June. Druggists throughout the State desiring to become members will please write to the Secretary, Dr. J. A. Miller, Harrisburg, Pa., for blank applications for membership.

**National College of Pharmacy.**—At the annual meeting held on the 5th of April, the following officers were elected for the ensuing year:

*President*, Mr. J. D. O'Donnell (re-elected); *1st Vice-President*, Mr. G. G. C. Simms; *2d Vice-President*, Mr. R. A. Bacon; *Secretary*, Mr. Charles Becker (re-elected); *Treasurer*, Mr. John A. Milburn (re-elected); *Additional Trustees*, Messrs. W. S. Thompson, R. B. Ferguson, H. E. Kalusowski, W. G. Duckett, J. D. Franzoni, Karl Kullberg, and W. C. Milburn.

The graduation of students will not take place until after the close of the spring course in analytical chemistry, which is now in progress under the teaching of Professor A. M. Read, and with a good attendance of students.

**Maryland College of Pharmacy.**—The twenty-eighth annual commencement of this college took place in the Academy of Music, on the 22d of March. The graduating class was smaller than last year, on account of the increased rigor of the examination. One-third of the class failed to come up to the standard required.

The following is the list of the graduates and prize men: Joseph Ayd (Md.), Royal H. Bresler (Pa.), Ernest F.

Hein (Ger.), John Herr (Md.), John H. Frames (Md.), Charles H. Lee (La.), Zebulon Lowe (Md.), A. B. Reese (Va.), Charles Schmidt (Md.), Frank E. Stough (Ohio), Wm. F. Theide, Jr. (Md.), M. J. Wolf (Md.), and Gustav Woltereck (Ger.).

*College Prizes:—First* (gold medal), Charles Schmidt; *Second* (Fresenius' Chemistry, Wöhler's Organic Chemistry, Armstrong's Organic Chemistry), Charles Hill Lee; *Third* (National Dispensatory, German Pharmacopœia), Ernest F. Hein.

*Prize from the College to the Junior Class* (Shakespeare's works), William Caspari, Jr. *Prize from the Alumni Association* (gold medal), Charles Hill Lee.

*Junior Class Students Entitled to Honorable Mention:* Wm. Caspari, Jr., R. P. C. Scheidt, E. H. Kabernagle, A. H. Shultze, Cameron Piggot, Hammond Mason, Clarence F. Moore, and R. S. McKinney.

**Alumni Association of the Philadelphia College of Pharmacy.**—At the annual meeting of this Association, held in the College Hall, on the 15th of March, the following officers were elected for the ensuing year:

*President*, Hugh Campbell; *First Vice-President*, William W. Moorhead; *Second Vice-President*, Henry Trimble; *Recording Secretary*, Wm. E. Krewson; *Corresponding Secretary*, L. E. Sayre; *Treasurer*, Edward C. Jones; *Executive Board*, R. V. Mattison, M.D. (1 year), John A. Martin (1 year), Adolph W. Miller, M.D. (2 years), Wallace Procter (2 years), John E. Cook (3 years), Jacob S. Beetem (3 years); *Trustee of Sinking Fund*, Thomas S. Wiegand; *Orator for* 1881, George W. Kennedy, of Pottsville, Pa.

The next meeting of the Executive Board will be held at the same place on Thursday, May 6th.

**Alumni Association of the Louisville College of Pharmacy.**—An annual meeting of this association, held on the 21st of March, the following officers were elected for the ensuing year:

*President*, J. A. Flexner; *Vice-Presidents*, Emil Scheffer, Jr., J. C. Loomis; *Recording Secretary*, Otto E. Mueller; *Corresponding Secretary*, Albert J. Schoettlin; *Treasurer*, B. Buckle; *Executive Board*, John F. Rudell, O. A. Beckman, Wm. Tafel, Geo. Stauber, and Henry Bushmeyer, Jr.

Quarterly meetings will be held May 4th, Sept. 7th, Dec. 7th, 1880, and Feb. 4th, 1881.

**St. Louis College of Pharmacy.**—The fourteenth annual commencement of this College was celebrated on the 16th of March, at Germania Hall. After an address to the Graduating Class, the President of the College, Mr. George Ude, conferred the degree of Graduate in Pharmacy upon the following-named gentlemen:

E. G. Bauer, V. E. Eilbracht, Zeno Felder, Julius Feickert, S. F. Flint, F. A. Graichen, E. T. Green, Erwin Grimm, A. Hamel, H. Hoyer, John P. Huhn, L. Kempf, Theo. Klipstein, Thomas Knoebel, A. A. Krusskopf, F. T. McAuliffe, A. Pohrer, A. Kohlfing, Benjamin Saenger, Emil A. Sennewald, H. Stubbemann, A. Temm, A. Troxell, Chr. Van Zandt, F. Vedder, and A. Wellmeyer. The silver medal of the Alumni Association, to be awarded to the graduate who attained the highest average in all of the branches taught, was presented by Prof. J. M. Good to Mr. Emil A. Sennewald. In the accompanying remarks by the Professor, he gave it as his candid opinion that, to all present appearances, the tendency of medical as well as pharmaceutical colleges was to prolong the time of study; and that, in this instance, the recipient of the medal, although he might have passed a creditable examination at the termination of the lecture course preceding the present one, had, in order to become still more proficient, attended another course; and to this as much as to his natural aptness was due the result. The following received honorable mention: Messrs. A. A. Krusskopf, Theo. Klipstein, and Thomas Knoebel.

The valedictory on the part of the Class was delivered by Mr. S. F. Flint. The various addresses were interspersed with music, and the evening's entertainment concluded with a social gathering in which dancing was a leading feature.—G. H. C. K.

## Pharmacopœia Matters Abroad.

At a meeting of the Executive Committee of the Chemists' and Druggists' Trade Association of Great Britain, held on Feb. 27th, Mr. Hampson moved the following resolution:

"That this Executive Committee is of the opinion that the Pharmaceutical Council, as representing pharmacy, should be legally empowered, in conjunction with the Medical Council, to frame and amend the future edition of the British Pharmacopœia."

He added that, in his opinion, a great mistake had been made by the Pharmaceutical Council in not accepting the resolution which he had lately put before them [it was offered at the meeting of the Council of the Pharmaceutical Society, in December, 1879, and was to the effect that the General Medical Council should be asked to receive a deputation to urge upon them the desirability of the Pharmaceutical Council being *legally* empowered to nominate pharmacists to co-operate in framing and amending new editions of the British Pharmacopœia, etc.—Ed. N. R.] He considered it the duty of the Pharmaceutical Council to ask the Legislature for power to have an equal share in the preparation of the pharmacopœia.—

On February 17th, 1880, the following law was promulgated by the French Government:

In consideration of the law of the 21st germinal of the year XI.; and in consideration of the report (of the Minister of Public Instruction, Mr. Jules Ferry) of Feb. 5th, 1880, which was approved by the President of the Republic, it is resolved as follows:

Sec. 1.—A special commission is formed under the Minister of Public Instruction, for the purpose of immediately undertaking the revision of the *Codex medicamentarius* or *Pharmacopée Française*, published by the Government in 1867, and to prepare a new edition of this work.

Sec. 2.—This commission is composed as follows:*

*President:* Gavarett, Medical Inspector General; *Vice President:* Chatin, Director of the Ecole supérieure de Pharmacie de Paris.

*Delegates of the Minister:* Dumont, Director of Higher Education; De Beauchamp, Chief of the first bureau of the Direction of Higher Education, *Secretary*.

*Ordinary Members:* Baillon, Bouchardat, Hayem, Regnauld, Sée (Germain), Vulpian, Würtz, all of them Professors at the Medical Faculty of Paris; Baudrimont, Bouis, Bourgoin, A. Milne-Edwards, Planchon, Riche—all of them Professors at the Ecole supérieure de Paris.

*Adjunct Members, with consultative vote:* Blondeau, Duroziez, Jungfleisch, Marty, Schauffele, Vigier (Pierre), all of them members of the Société de Pharmacie de Paris.

Paris, February 17th, 1880. Jules Ferry.

**The New Russian Pharmacopœia,** published by order of the Russian Government and written by Prof. Dr. J. Trapp (who has also been the author of the preceding edition of 1871, as well as the military and the court pharmacopœias), has just reached us. It forms a handsome, large volume of 667 royal 8vo pages, printed in large, clear type on excellent paper.

The arrangement of the text is strictly alphabetical. Weights and measures have been abandoned, and parts by weight have been substituted, thus paving the way for the introduction of the metric system, in prescribing, in Russia. Due regard has been had to new remedies, there being no less than 175 additions in the shape of crude drugs, galenical and chemico-pharmaceutical preparations, so that the total number of articles now reaches 1027. In many points, particularly in the wording of the text, the German Pharmacopœia has been taken as a pattern, but the author has carefully made use of criticisms and suggestions which have been made in the text of the latter during the last five or six years. While the headings and ingredients of each formula or preparation are

* What follows is a *condensed* translation of the original.

given in Latin, the text is written in Russian, which will for the majority of our readers make a use of the work impracticable.

**Production of Fragrant Flowers in Southern France.**—As is well known, the head-quarters of European flower-farming for perfumery purposes are at Grasse, Cannes, and Nice. One of the large perfumers at Cannes, it is stated, employs annually 140,000 lbs. of orange flowers, 12,000 lbs. of cassie flowers, 140,000 lbs. of rose leaves, 32,000 lbs. of jasmine blossoms, 20,000 lbs. of violets, 8,000 lbs. of tuberose, 16,000 lbs. of cassie, besides rosemary, mint, lemon, citron, thyme, and other fragrant plants in larger proportion.

The violet is not cultivated at Grasse, but Nice and Cannes produce annually 25,000 kilograms, the annual manufacture of which into oils and pomades is about 12,000 kilograms. The annual produce of orange flowers at Nice amounts to 200,000 kilograms, while at Cannes and the adjacent villages as many as 435,000 kilograms are produced. These it seems are of a much superior quality and in every way better adapted for manufacture than those of Nice, which are said to be fit only for distillation. Cassie flowers are produced at Cannes to the extent of 16,000 to 18,000 kilograms a year, and it is stated as a remarkable fact that the produce of these flowers belong exclusively to the soil of Cannes, as the cassie tree will not grow to perfection either at Nice or at Grasse. From Algeria large quantities of essence of geranium are obtained, the plant being cultivated over an area of 409 hectares in the plain of Metidja, especially at Chetagas and Bouffarick.

**The Bordeaux Leech Trade.**—An official account of the Bordeaux leech farms, by M. Sapin, member of the Limoges Society for the Protection of Animals, published in the *Courrier du Centre* of the Haute-Vienne for last April, is made the text for an essay on cruelty to horses by "Ouida" in the *Whitehall Review* of January 17th:

Certain speculators, we learn, "have made artificial swamps on the banks of the Garonne, and filled the swamps with leeches. To be profitable, these leeches must multiply themselves by millions; to do this they must be liberally supplied with food; to thus supply them the Bordelais speculators buy up all the old and worn-out horses of the province, and drive or drag these horses into the swamps, which are subdivided by wooden compartments, so placed that when these unhappy animals have been forced into the mud there is no escape for them. The leeches fasten on them instantly by thousands; the horse is in few moments black with crawling creatures; the bloodsuckers fix themselves most of all on the open wounds and galls that these poor horses have incurred in their many years of service."

The frantic terror of the poor horses is described as, bleeding from all their most sensitive parts, they try vainly to shake off the leeches, but are at last sucked down into the noxious slime and seen no more. Nearly 20,000 horses—aged, infirm, weak from overwork, hunger, and fatigue—are said to be sacrificed annually in this way at Bordeaux. "Ouida" judges the agonies of the horses will not be a sufficient reason to check the barbarities of greedy speculators, but she hopes that an argument which may be heard is that leeches nourished on agonizing and often diseased horses are very likely to convey ulcers, inflammations, and scrofulous maladies into the human system, and she states, on the authority of doctors of eminence, that such diseases do frequently follow the application of leeches.—*Chem. and Drugg.*

**The Moss Engraving Co.**—Mr. John C. Moss has lately retired from the Photo-Engraving Company, 67 Park place, with which he was for some time connected, and has undertaken the superintendence of the operations of a new company, under the above title, at 535 Pearl Street, cor. of Elm, in this city. The excellence of the work done by this method has had numerous illustrations in pages of this journal, and the new company promise "the best work at low prices, always on time."

**Salicylic Tampons.**—The German War Department has adopted a special form of salicylated tampons, which are intended for issue on mobilizing the army for war. Each man receives two of these tampons, one large, the other small, which are strung together and enveloped in parchment paper. According to C. Bernbeck, they are prepared as follows:

For the larger size, pieces of very soft gauze, 15–16 cm. (5⅞ to 6¼ inch.) square, are wrapped loosely around 2 grams of batting; for the smaller size, pieces of 13 cm. (5¼ inch.) square, around 1 gm. of batting. They must be soft enough to assume any desirable form, when compressed. To impregnate them with 11% of salicylic acid, they are steeped in the following solution:

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| Salicylic acid | 110 grams. |
| Castor oil | 40 " |
| Alcohol | 3½–4 litres, |

after which they are dried by suspending them on fine strings in well-ventilated and heated rooms.

These tampons are to be introduced by the soldiers as a temporary protection against septic matter, into a wound which they may receive.—*Pharm. Zeit.*

**Summer Classes in Pharmacy and Botany.**—The summer classes inaugurated some time since in the New York College of Pharmacy bid fair to have a good attendance during the coming season. Prof. Bedford's class in Practical Pharmacy meets on Monday evenings at 7.30 o'clock, during May, June, and July. Prof. Wood's class in Botany is held on Wednesdays, at 3 P.M., from May 5th to August 4th.

The latter class is not confined to pharmaceutical students alone, but is intended for all who are interested in the subject. We have already heard of a number of physicians who intend to join it. The fee for each class is five dollars.

## PHARMACEUTICAL CALENDAR.—May.

*N. B.—The officers of Societies, Colleges of Pharmacy, Pharm. Associations, etc., will oblige us by forwarding schedules of their meetings, lists of officers, and any changes that may be desirable.*

| Date. | Society Meetings. |
|---|---|
| 4th, Tues. | Philad. Coll. Ph.—Trust. Meet. |
| 5th, Wed. | Sixth Decennial Pharmacopœia Convention meets at Washington, D. C. |
| 6th, Thur. | New York Coll. Ph.—Trust. Meet. |
| | Louisville Coll. Ph.—Pharm. Meet. |
| | Phila. Coll. Ph.—Alumni Exec. Meet. |
| | Massach. Coll. Ph.—Trustees' Meet. |
| 11th, Tues. | St. Louis Coll. Ph.—Pharm. Meet. |
| | National Coll. Ph.—Trust. Meet. |
| | Massach. Coll. Ph.—Pharm. Meet. |
| | Kings Co Pharm. Soc.—Monthly Meet. |
| | Pittsburgh Coll. Ph.—Trust. Meet. |
| 12th, Wed. | Cincin. Coll. Ph.—Pharm. Meet. |
| 13th, Thur. | Newark Pharm. Assoc.—Monthly Meet. |
| | N. Y. Germ. Apoth. Soc.—Monthly Meet. |
| | Louisville Coll. Ph.—Directors' Meet. |
| | Texas State Pharm. Assoc.—Meets at Galveston. |
| | Maryland Coll. Ph.—Meet. |
| 18th, Tues. | Phila. Coll. Ph.—Pharm. Meet. |
| | St. Louis Coll. Ph.—Trust. Meet. and Alumni Scient. Meet. |
| | Kentucky Pharm. Assoc.—Meets at Owensboro, Ky. |
| 19th, Wed. | New York State Pharm. Assoc.—Meets at Syracuse, N. Y. |
| | New Jersey Pharm. Assoc.—Meets at Jersey City in Boorum Hall, cor. Newark ave. and Groove st. |
| | Ohio State Pharm. Assoc.—Meets at Dayton, Ohio. |

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